APPENDIX D1:
COMMENTS AND RESPONSES SUMMARIZED BY CATEGORY OR SUBJECT MATTER

The department has analyzed all the comments received on the proposed rule in detail and responses to these comments by category or subject matter are given in this Appendix. The CES narrative also addresses many of the comments in that many of the broader issues raised in the comments are responded to in the narrative. Additionally, Part 2 of this Appendix provides responses to some specific individual comments.

Our process for responding to the comments on the proposed rule was that they were reviewed initially, and issues identified in the comments were coded into one of over 20 major categories. Each of these major issue categories was then subdivided and coded into more detailed issues before being assigned to staff for analysis and response. In some cases the final rule language was changed as a result of the comment review and analysis; in other cases the response indicates why a change was not made.

General support for the rule as proposed and filed

"I am a 22 year worker in the telecommunications construction field. I strongly support L&I rules on ergonomics."

"Your department must adopt this rule. The working people of Washington State are counting on it."

"I am writing to support the current proposed Ergonomics Rules."

"I urge you to adopt the ergonomics rule."

"I as a member of the field of construction worker for over 20 years feel that there is no possible reason not to do the proper and just act and pass this ergonomics rule."

"Please support the ergonomics rules that have been proposed."

"I urge you to remain on the side of the injured worker and allow this rule to go forward and become part of the law."

"I am contacting you, on behalf of the over 1200 members of International Brotherhood of Electrical Workers Local 73, to express our support of the Department's proposed ergonomics rule."

"I am writing to register my STRONG support of WAC 296-62-051. I have been in the workforce in Washington for almost 20 years and hope to complete my career in good health."

"I hope this regulation is adopted, and thank you for the model you have provided to others at the state and federal levels."

"The profession of Diagnostic Medicine Sonographers supports the WISHA proposed rules and urges their passage."

"This proposed rule will make life better for all Washingtonians now and in the future. It is the right thing to do."

"I support the proposed ergonomics rule. This has been a long awaited rule and needs to be implemented."

"I am writing as a concerned citizen and taxpayer to let you know that I strongly SUPPORT the currently proposed *Workplace Ergonomic Rules (Chapter 296-62 WAC, Part A-1, etc.*)."

"The rules are responsible, cost effective, sensible and civilized public policy. We commend the department for its responsible actions in protecting workers."

"We commend the Washington Department of Labor and Industries for taking a leading role in addressing workplace ergonomic hazards."

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"We commend the Washington Department of Labor and Industries for taking a leading role in addressing workplace ergonomic hazards."

Benefits will outweigh the costs.

"The rule will produce benefits that far outweigh the costs of complying."

"I work with several people who likely would have been saved great pain and suffering if these rules would have been in effect. The long-term gains more than offset the potential costs of such a plan."

"I believe that once these programs are established and running, many businesses will find that the long-term benefits will far outweigh the costs of the initial start-up."

"This proposed rule can help identify and eliminate these know hazards at a savings not only to taxpayers of this state, but also to the employers that pay higher premiums, and to the workers who suffer physical pain, and loss from work."

Many businesses will only address WMSDs if there is a rule in place.

"These new rules and restrictions would help my employer and others become the safety and health partners they say they would like to be."

"Yet, we know from much experience that strategies to prevent these types of injuries will not be implemented unless they are mandated by law."

"We need this rule to ensure that all employers comply and address ergonomic injuries."

"As a Union Representative who has had to deal with many recalcitrant employers who would not make proper workstation changes, I urge you to implement the rules."

"I am 42 yrs. old and I have trouble getting out of bed each and every morning for all the low grinding and welding I have done. These jobs could have been made easier by just some minor changes in table height! So simple but so hard to change when a company doesn't have to. Please help us."

"I believe rules proposed are important to raise the awareness of these issues in the workplace, especially with mid-size and smaller employers in our state."

"I support the new rules because the current ones do not go far enough to reduce repetitive motion injuries."

Science supports the need for the ergonomics rule.

"I support this rule. It makes sense to use science to help reduce worker's injuries and pain and at the same time cut employer'' costs."

"I believe that the scientific literature has established a reasonable relationship between working in certain occupations as well as particular types of hazardous exposures to WMSDs."

"The Department's proposal is based on a sound scientific basis; action now reflect prudent public health protection."

"There is considerable evidence that well designed ergonomic efforts to identify and reduce these hazards will be successful in preventing many of these workplace musculoskeletal problems. There is clear scientific justification for ergonomics rulemaking at this time."

The employee participation requirements of the proposed rule are important to its success.

"This rule requiring the employer to work with the employee will make the difference on its success. Together we can make our workplaces safer."
"Workers will be active participants in their own safety and employers and mangers will have the tools to maximize safety within their organizations."

The ergonomics rule is a flexible rule, and a fair compromise between worker safety and the needs of running a business.

"I support the adoption of the proposed Ergonomic Rule. It is a fair and reasonable compromise."

"Flexibility is built into the rule so that employers have choices regarding how they will comply with the standard."

"The proposed rule is a reasonable attempt to deal with a serious health and economic problem affecting workers and employers in our state."

"This rule is an acceptable compromise between protecting workers from common injuries and the needs of running a business."

"The rule is flexible and makes sense."

"The rule is flexible, but it has enough specific detail so employers will know exactly what they have to do. It will not tell employers how to run their business."

"I commend your efforts to phase in this rule gradually and provide flexibility to businesses."

"I feel the plan proposed helps to protect workers and is fair and equitable compromise on this very important matter."

"Lifting, repetitive motion, awkward positions, confined space are unfortunately, part of the workplace environment for employees in grocery stores. What the rule is reasonably asking is that employers analyze caution zone jobs, provide employee education and employee participation, and hazard reduction."

The ergonomics rule will prevent injuries, save money, and provide employers other benefits.

"I believe the implementation of these rules will help to protect workers in Washington state and help to keep our work force productive."

"The proposed rule will protect workers from the primary cause of injury and illness at Washington workplaces, prevent work-related musculoskeletal disorders and protect worker's bodies from unnecessary wear and tear on the job. Reducing pain will increase productivity, which is good for the workers and for the employers."

"The proactive approach to avoiding ergonomics will save employers and the state a great deal of money, and will save workers pain and permanent loss of functions."

"The proposed rule just makes good sense. It prevents injuries thereby saving both the worker and company in terms of costs."

"The proposed rule will reduce injuries, save money and increase productivity, benefits that far exceed the cost of complying."

"As a consumer and taxpaying citizen, I strongly urge passage of these ergonomics rules, so that all honest consumers can be at least partially relieved of paying for treatment of ergonomically related ailments through increased costs passed along by businesses."

"In the long run these measures will save employers and the state money. They will save workers pain and possible permanent impairments. The question is not "why should employers pay?" It is: "Do you pay now or pay more later?"

Through this process of supporting the proposed rule we have not only managed to service the longevity of all working carpenters and craftsmen and the welfare of their families, but, to also service our contractors who continually ask, "how do we retain our experienced steady employees that we have invested time and money towards training?" The solution is easy, promote ergonomics training and practices in the workplace as part of human resources management and an investment in the future for all parties in the construction industry.

"The passing of this law could save millions in health care dollars better spent on prevention rather than compensation and treatment after injury takes place due to negligence."

The preventative nature of the ergonomics rule makes sense and will protect workers.

"The WISHA proposal makes good sense by requiring employers to find and fix hazards that cause injuries. It is based on the principle of prevention. The rule will protect workers and reduce injuries."

"I urge the adoption of the ergonomic rules as a primary prevention health promotion program for workers."

"I am in full support of the primary intent of this proposed rule, namely to prevent these injuries before they occur. Prevention is the key if we are to truly make a difference in our workplaces. Prevention will result in a lessening of pain and suffering among workers; and, likely businesses will be pleased because prevention will also ultimately result in savings to their bottom lines."

"We support regulatory action that will reduce the incidence of occupational illness and injury. We anticipate that the proposed rule will be particularly effective because it is preventive, not reactive."

"It focuses on preventing injuries rather than responding after someone becomes injured. It will also prevent those employers who are already working to eliminate ergonomic hazards from subsidizing the worker's compensation system for those employers who would choose not to protect workers."

"The UFCW commends Washington State for publishing a proposed rule that is prevention based."

"These rules are overdue, and will be a great help to ensure that our workers can perform their jobs without injury for many years to come."

"It has been my experience that prevention is the logical approach to protect workers over the long-haul."

"Employers everywhere need guidance in setting up proactive programs to reduce the incidence of crippling musculoskeletal disorders. Washington State is to be commended for leading the way."

"Contrary to the California Rule and proposed Federal Rule, the Washington Rule is proactive. The existing General Safety and Health Standards provide for the general programmatic framework of workplace safety and health programs (employer and employee responsibilities, safety committees, training, record keeping, etc.), and provide an excellent basis for the proposed proactive measures."

"In our view, we believe the requirements contained in this proposal represent an approach which is preventive in nature and will benefit workers and their employers where exposure to ergonomic risk factors exists. We applaud WISHA's initiative to address one of our nation's most pressing safety and health matters."

"Since the proposed rule focuses on reducing the hazards in the workplace and NOT on punishing employers when an employee has a claim, employers can be in compliance by controlling items within their purview, such as job rotation, types of tools used, placement of objects, etc. This is a major improvement over both the California ergonomic rule and the proposed OSHA ergonomic rule."

The proposed ergonomics rule will create a safer work place for workers.

"We need to do everything possible to create a safe workplace. I believe the proposed ergonomics rule will do just that."

"On an everyday basis workers are being injured. These rules are important to the well being of all workers."

"I support the adoption of the departments ergonomics rules. These rules are a wonderful step towards making the workplace safer. After seventeen years of driving a garbage truck, I know first hand, (no pun intended) these rule are needed."

"I am writing to support the ergonomic rule proposed by L&I. As a registered nurse, I am at great risk to suffer back injuries and other work-related musculoskeletal disorders."

"Stand up for safe work places for the men and women of this country, don't be intimidated into weakening or delaying this most important rule."

"Therefore, SEIU strongly supports WISHA's efforts to protect Washington State workers from this epidemic by promulgating their own ergonomics standard."

"It is without at doubt the most important worker safety rule that WISHA has adopted in the last 25 years."

"I am writing in support of the Department of Labor and Industries Proposed Ergonomic rules. It is crucial that Americans receive more ergonomic protection in the workplace."

"We hope that wisdom will prevail and the "Ergonomics Rule" will become on of the most significant safety and health rules PASSED for the working people of the State of Washington."

"I SUPPORT THE ERGONOMICS RULES AND URGE YOU TO IMPLEMENT THEM TO HELP ALL WORKERS."

"I believe the implementation of these rules will hope to protect workers in Washington State and help to keep our work force productive."

"Please pass these new ergonomics rules and send a message to our employers: We are not an expendable resource."

"All they are saying is listen, do something, adopt a rule that offers hope, relief and an end to the fear, the pain, the suffering which is so common in the workplace. We can do something. We must do something."

The proposed rule is well-written and a good approach to address WMSD hazards.

"In my opinion, the proposed rule is well-written, supportive of employers as well as of workers, and provides excellent guidelines to assist employers to implement an ergonomic program in their organizations."

"I think the identification of "caution zone" jobs is truly an inclusive, preventive approach based on sound evidence and good sense."

"These rules would provide consistent expectations and protections for all employers and employees."

"We commend the Washington Department of Labor and Industries for taking a leading role in addressing workplace ergonomic hazards."

"The proposed rule allows, indeed encourages employer input and use of industry best practices. It is not a one-size fits all approach. It does not require employers to do anything they shouldn't already be doing in order to protect their workforce and to minimize cost to the workers' compensation system."

"This is a good rule with ample time for the employer to come in to compliance."

"The proposed rule changes are right on point. The training requirement for supervisors, and employees; the assessment of "caution zone" jobs, the involvement of employees in analyzing such jobs and selecting control methods to reduce hazards makes good sense."

"It shouldn't have to take an ergonomic consultant (like myself) for employers to initially screen jobs to identify which jobs are covered by the proposed rule. The "Caution Zone" list included in the proposed rules uses research-based job hazards in a clear format (especially when combined with Appendix A) so that any employer can quickly and easily identify which jobs, if any, need further evaluation."

"I believe that the ergonomics rule that L&I has proposed should be a very positive guide to addressing these problems. The rule provides specific, yet flexible guidelines for the development of an ergonomics program, clear criteria for identifying well established risks for MSDs and should greatly aid industries in formulating reasonable and effective responses to identified hazards."

"After reviewing the materials provided regarding the proposed Labor and Industries Ergonomic rule, I must say I am very impressed with the thoroughness and care taken by all involved to develop an effective, efficient and common sense procedure for addressing a problem that strikes at the heart of every industry in the state of Washington."

"Once again, I am very impressed with this proposed Ergonomic rule itself and I congratulate the leaders, investigators, researchers, and all participants for their efforts which resulted in a professionally developed and extremely concise remedy of an age old problem."

The proposed rules should be adopted as soon as possible.

"I support the proposed rules and urge you to implement them as soon as possible."

"Fortunately L&I is aware of the need to protect & prevent and this Proposed Ergonomic regulation" is imperative."

"I fully support the D.O.L's Ergonomic Rules. Therefore, I am requesting that these rules are adopted as soon as possible."

"Safety and health are for everyone. Please finalize the ergonomic rules as soon as possible."

"I can't urge you enough to expedite their adoption."

"I am urgently requesting passage of these rulings in hope of preventing someone else from having to experience such disabling but preventative injuries."

"Please continue to support and push this proposal for the good of all workers. Thank you for your help."

Training requirements good

"The rule appropriately distinguishes between, and requires where appropriate, general ergonomics awareness education and job-specific ergonomic training."

"We need to ensure that employers utilize our knowledge and incorporate the workplace experience into their education programs."

"Section 6. This section requires job specific training if an intervention dealing with work practices is proposed. This is logical."

"My experience in caring for patients makes me believe that:

> Work-related musculoskeletal injuries are preventable. Often a little education and minor interventions in the work place reduce the workers risk for WMSD's. This is provided in this standard. Simply as a physician I spend a lot of time informing patients of the risk of medicines, procedures etc. I see no difference why workers shouldn't be informed of the risk of their work related to potential musculoskeletal injury. In clinical practice a little education about ergonomics has helped folks that I care for."

"The emphasis on employee education is important because unless employees understand the proper way to work to avoid musculoskeletal disorders, no amount of ergonomic equipment will help."

Issue number	Typical Comment(s) or Typical Point(s)	Response
1.00	**Analysis of Costs and Benefits**	
1.01	COSTS UNDERESTIMATED As with other rules and regulations placed down by WISHA, I do not believe that the costs have been realistically estimated for any form of the implementation of this ruling	The cost estimate in the department's Small Business Economic Impact Statement (SBEIS) was the most detailed and comprehensive analysis available at that time. Information used to produce this document included two large employer surveys of approximately 7000 businesses; OSHA compliance cost estimates, which represented the most detailed set of information on ergonomics compliance solutions and associated costs; and various population and wage estimates from the state Employment Security Department and the Bureau of Labor. L&I has now completed a more comprehensive cost-benefit analysis. Some of the disagreement with the department's compliance cost estimates appear to reflect a misunderstanding of how the compliance costs were calculated and presented. Commenters may not recognize that the compliance costs are: 1. Expressed as an annualized cost when the cost itself may occur in a single year and not in other years. Annualization periods of 3, 5 or 10 years depending on the component of the rule 2. Future costs are discounted by five percent to reflect "current dollars" (as are the benefits in the Cost-Benefit Analysis). 3. The cost is averaged over <u>all employees</u> at a business, not just affected employees. 4. The cost is averaged across industries in a SIC. Based on testimony received during the comment period and due to the department's own efforts to improve the cost estimates, a number of changes have been made. The primary changes made to the cost estimate are 1. The ergonomics awareness education time estimate was increased from 40 to 50 minutes 2. Average caution zone identification time was increased from 5 to 10 minutes for some industries. 3. An assumption was added that health and safety personnel who had ergonomics training would conduct one quarter of the hazard analyses of caution zone jobs. 4. The fractions of the workforce in caution zone and hazard jobs were re-estimated using a more rigorous procedure.
1.01	…the cost estimate that the Department offers for implementing this standard seems to me to be way out of whack. Now, granted, they admit that it's just an estimate, but since they use it as selling point, that's why I'm bringing it up here today because if these numbers and these items are way out of line, how many other points within this standard are also way	The Cost-Benefit Analysis was the product of a thorough analysis using standard economic methods and the best available data. Several steps were undertaken to express the anticipated rule compliance cost on an annual per employee basis. The key steps taken were:

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	out of line? How many other numbers are way out of line? How many other of their estimates are also way out of whack?	1. **Discounting of future costs**: The estimated compliance costs were discounted at 5 percent (future rule benefits are also discounted at this rate). This is a standard procedure in Cost-Benefit Analyses. 2. **Annualizing of costs**: Depending on the component of the rule being considered (job analysis, training, hazard reduction etc.) costs were annualized over several years. This is because • compliance costs will be spread out over many years because of the rule phase-in; • engineering solutions to job hazards are anticipated to have a ten year lifetime and thus should be amortized • some costs such as training are recurring (every 3 years) and are better expressed as an annual cost. Annualization of a series of costs is a standard accounting and Cost-Benefit Analysis procedure. 3. **Expression of costs**: Costs were expressed as cost per employee, cost per establishment and total cost for large and small business categories by one digit SIC category. The rule is meant to cover all employees in the state (level 1 population in the SBEIS). However, the department has estimated that only about 10 percent of employees in Washington state work in hazard jobs (level 3 population) and that about 20 percent work in caution zone jobs (level 2 population). Because different components of the rule apply to different groups of employees (all employees-review and management; caution zone employees-basic training; hazard job employees-hazard reduction), it is reasonable to present per employee costs using the total population of employees (level 1 population). In other words, compliance costs were summed and averaged across all employees within a one digit SIC category for each business size grouping: large business > 50 employees, small business < or = 50 employees. The cost per affected employee, or job, will vary by rule component, but is higher than the average per employee costs. Compliance costs per *affected* employee are presented in the department's Cost-Benefit Analysis of the ergonomics rule. It should be noted that presenting the annual compliance costs on a per employee basis using the level 1 employee population does not affect the cost per establishment or total rule compliance costs reported in the SBEIS. 4. **Average costs**: Annual per employee compliance costs were expressed as averages across SIC categories. In general, businesses within a given SIC category that have fewer than average hazard jobs will experience lower compliance costs, while those with a higher than average fraction of hazard jobs will experience higher compliance costs. Restating, the annual per employee compliance costs presented in the SBEIS are averages and should

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		not be construed as representing the annual per employee compliance costs of each individual business within a particular SIC category.
1.01	Finally, the cost estimate that the department gives for my company to implement this standard is way out of whack. Just the research alone that we will have to do in determining what it will take to comply with this standard-as it is written-will easily gobble up several years worth of the 10 cents per employee per day estimated, before we have even begun any necessary modifications and training. That was one of the easiest things to figure out when reviewing this proposed standard. Especially when you consider how thorough these hazard assessments will be for each job (we are not moving boxes from a conveyor belt to a bench) while following the appendixes in this ruling. I realize that it was only an estimate, but it was used as a selling point by your department and the numbers are not even close. Which raises the question; if this information is inaccurate, how much of the other information that the department uses to draw it's conclusions is also inaccurate?	The costs indicated are based on the best available data and have been thoroughly documented in the cost-benefit analysis. The comment presumes that the information must be inaccurate, but does not provide better information on which a cost analysis can be based.
1.01	I want to know how the employers are supposed to cover the costs associated with administering this proposal. Preliminary investigation has shown that this could cost as much as 1% of a company's gross income. When many companies are working with a 2 – 3 percent margin, this takes a substantial cut out of their profits.	L&I's analysis suggests the cost of compliance as a percent of sales will average 0.05%, with the cost for small construction firms being somewhat higher but still only 0.1% of sales.
1.01	L&I apparently included all muscular skeletal injuries including broken bones and onetime occurrence injuries. In the past six years we have had many broken bones and onetime occurrence injuries, but only three injuries in this time period that the standard is meant to control. Our cost for these three injuries is high but not as high as the cost of training. Using the departments figure of .07% of gross we would pay twice as much as the total claims cost. When we calculated what we feel it would cost our company we found the percentage to be 1.1% of gross, that would result in an outlay of 3-1/3 times the cost of those three claims.	The data on which both the proposal and the final rule were based does not include broken bones or other injuries from slips, trips, falls, etc. The data is consistent with the purpose of the rule found in WAC 296-62-05101. Similarly, the cost-benefit analysis is limited to WMSDs and concluded that there would be significant savings as a result of the rule. Employees that are exposed to the specific risk factors described by the rule are at a significantly higher risk of injury, even if individual employers have been fortunate enough not to experience the costs of those injuries, at least yet.
1.01	L&I cost estimates are not accurate. There are no allowances for capital investments in equipment solutions or hiring more people to reduce workloads. "Real world" costs need to be actively solicited from a large number of employers and industries before a cost/benefit analysis is done. The economic analysis in the standard is flawed and inadequate. In the discussion of cost analysis it is noted that a "formal benefit cost analysis"	The cost benefit analysis *does* include control costs, which, depending on the industry, could involve capital equipment, administrative solutions or personal protection. L&I conducted two large surveys of a representative sample of Washington businesses to obtain information on exposures and costs of ergonomic hazard analysis and training. The cost-benefit analysis was completed prior to the rule's adoption, as required by

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	has not yet been done. It seems that this would be the first thing to be done before imposing what will be a costly program on both large and small business in Washington State. Many of the cost calculations in the standard are prefaced with statements such as it "is widely believed" and in many places stated "facts" are based on "assumptions." This is not research but guesswork and not a credible basis for a standard. In particular, the Department has grossly underestimated the cost to implement the proposal. As I stated earlier, M.Cubed estimates the rule's economic impact the first year alone at $725 million – almost 1,000 percent higher than L&I's estimate. Researchers found that the cost to individual companies and agencies could reach tens of millions dollars each. L&I also asserts that the costs of complying with the standard will only cost employers $77.1 million dollars. While L&I's estimate is an indication of the economic impact, it appears to grossly underestimate the costs employers can expect to incur as a result of complying with the rule. In an independent assessment of L&I's Small Business Economic Impact Statement (SBEIS) it was identified that the fiscal impact to our state would *conservatively* reach $725 million the first year of implementation. The differences between the two reports are quite obvious, for example, L&I assumes employers will conduct their own hazard assessments and does not consider the consultant costs that are likely to be associated with implementation. In addition, L&I's estimate significantly underestimates the modifications to the workplace as a result of complying with the rule. Individual companies could spend millions and millions of dollars with no assurance that injuries will be reduced. As mentioned above, L&I's SBEIS was independently assessed to review the methodologies used by the department and conclusions drawn and is included as an attachment entitled "*Economic Analysis of the State of Washington's Proposed Ergonomics Rule "*. AWB specifically requests that the findings and references of the above named report be submitted to the formal record. We also strongly encourage the department to carefully review the findings and reconsider its premature effort to regulate such a complex issue. The results of these reports beg for L&I to withdraw its effort and to work with the business community to find practical, effective and affordable solutions.	the Administrative Procedures Act. All assumptions in the analysis are considered conservative and are based upon evidence in peer-reviewed academic literature, our own survey data or that of federal OSHA. The department believes that its economic analysis is thorough, accurate and based on the best available evidence. The department conducted two large employer surveys in which a total of 7,000 businesses employing workers were contacted. Businesses were asked about duration and intensity of worker exposure to ergonomic hazards and questioned about the number of WMSDs and their efforts to reduce potential ergonomic hazards. Substantial amounts of information were also gathered from the Washington State Employment Security Department, the Department of Revenue, and the Bureau of Labor Statistics. Additional information on the costs to reduce ergonomic hazards was obtained form OSHA, which conducted a detailed analysis of control solutions for jobs with ergonomic hazards. The department has evaluated the M.Cubed economic analysis of Washington proposed ergonomic rule and has found it subject to serious analytic flaws and unsubstantiated estimates. A brief summary of the two most extreme errors in the M.Cubed is presented below. (A more complete response is found in CES Appendix D) 1. Error in estimating the populations affected by the proposed ergonomics rule. M.Cubed seems to confuse units of employees and employers. The department, through its extensive survey of Washington businesses, determined that about one in ten jobs will be categorized as a hazard job, and about one in five will be a caution zone job. M.Cubed, which has done no surveying, merely assumes that 30 percent of employers (not employees) will have hazardous jobs and about 60 percent will have caution zone jobs. M. Cubed then makes a sweeping error by assuming that all jobs in those businesses will be affected by the rule. The L&I survey demonstrates that this is false. Moreover, the rule applies only to those jobs that fall within the caution zone, and an employer covered by the rule does not need to address other jobs that fall outside the caution zone. With this single unsubstantiated and clearly erroneous assumption M.Cubed nearly triples the estimated cost of compliance for the rule relative to the departments estimate. The department's analysis is based on the best available data, its assumptions are defensible, and it is clearly superior to the M. Cubed analysis. 2. Hazard reduction (control) cost estimates For jobs in which ergonomic hazards are determined to exist, the hazard must be reduced to the degree feasible. The department based its' estimates of ergonomic control cost for hazard jobs on its expert opinion, evidence in the record and extensive research done by OSHA. The M.Cubed analysts appear to

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		base their control cost estimates on the testimony submitted by a number of businesses during the public comment period for the California ergonomics rule, a rule with a substantially different design. As an example M.Cubed purports that the average control costs for a large manufacturing company (SIC categories 2 and 3 with greater than 50 employees) is $ 1,000,000 per year. The Employment Security Department reports the average employment for large manufacturers at around 300 employees per establishment. Assuming that about half of these employees are in actual manufacturing jobs in which ergonomic hazards might potentially exist, the M.Cubed estimate implies annual recurring control costs of about $7,000 per manufacturing employee. The department believes that in the manufacturing sector, control solutions for hazard jobs will be found for a small fraction of the value proposed by M.Cubed. The compliance costs that M.Cubed assumes for small businesses are even more extreme: about $14,000 per employee per year. Even if M.Cubed assumption that every hazardous job would cost $7-14,000 to control could be proved as sound, there are no requirements in the rule that would lead to annual recurring costs.
1.01	L&I estimates that the proposed rules will cost businesses $77 million per year statewide. Even if that estimate is correct, it is not representative of the actual burdens on individual employers. L&I has simply taken the expected costs per employee and multiplied it by the number of employees in the state. What it has failed to consider is the different burdens on various employers. The cost of compliance for office workers, for example, will be much lower than the cost for manual laborers. A good example can be found at ASC Machine Tools, Inc., my employer. Initial estimates of the increased cost of implementing programs to comply with the proposed rules run at **over $1 million per year!** For a small business like ASC, such economically unfeasible costs will surely drive us out of business, or at least out of Washington. L&I is not given unbridled discretion to implement standards designed to create absolutely risk-free workplaces regardless of the costs. The disastrous economic effects of the proposed rules will be suffered disproportionately by business with a large percentage of manual-labor employees, and L&I must take such costs into consideration before enacting rules. Because of the disproportionate costs to such businesses, the overboard and vague proposed rules would create an unreasonable burden and should not be enacted.	In the SBEIS the department separated out industries where manual labor is prevalent from industries where office work is the norm. In the full cost-benefit analysis this has been taken further, and distinct industries within each major industrial division have been analyzed. The department estimates of the cost impact are based on a detailed survey of a representative sample of Washington businesses on both worker exposure to risk factors and on employer costs to identify and analyze jobs. Costs to control the hazard were based upon an extensive review by OSHA of control solutions across a wide variety of industrial scenarios. L&I is not able to evaluate the $1 million estimate in the comments, since the supporting data was not provided.

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1.01	We believe the Small Business Economic Impact Statement is flawed because of the following reasons: • Both the number of surveys and sample sizes providing information were too small. • Information/data extrapolation was extreme. • An excessive quantity of assumptions and estimates were utilized to establish the final "facts". We also firmly believe that the published economic summary and the SBEIS are noticeably flawed. There are several reasons for our belief. The information presented was primarily based upon data collected from only two surveys of a cross section of Washington employers. The total number of respondents appeared to be inadequate. Thus, the sample sizes that provided the information were too small. Second, information and data extrapolation was extreme. For example, the Results and Discussion section of the SBEIS lists annual costs of $1.87, $1.86 and $0.16 respectively for awareness education, job training and personal protective equipment costs. Our members strongly disagree with the cost estimates. Third, there has been an excessive use of estimations and assumptions to establish economic facts. The abundant use of estimates and assumptions casts a large shroud of doubt upon the study's results	The two samples the writer refers to were based on a representative sample, by industry and size, of Washington businesses. The first survey was answered by nearly 5,000 businesses, the second by more than a thousand. In survey research methodology these are not considered small samples. Writer misunderstands the cost analysis. These projected costs are on a per employee basis, not a per "affected" employee basis. The department surveyed many businesses in the construction industry as to the number of their workers exposed to various physical risk factors for 0-2, 2-4 and more than 4 hours. Our estimation of the fraction of the workforce in the construction industry exposed to one or more of these risk factors was based on this survey data. For hazard jobs in the construction industry as a whole this was 17% of the workforce for small employers and 25% for large employers. For caution zone jobs this ranged from 33% of the workforce for small employers to 37% of the workers for large employers. When presenting our cost numbers in the SBEIS we divided total costs by the total employment in the industry, not just by the number of workers in caution zone or hazard zone jobs. All assumptions are considered conservative and are based upon evidence in peer-reviewed academic literature, our own survey data or that of OSHA's. Any prospective analysis of costs and benefits must rely on assumptions; those in the cost-benefit analysis are identified and are appropriate.
1.02	**Inadequate consideration of the costs to small business** I understand that there are some industries that do need an ergonomic program, but there are also some small companies such as ours that it's not economically feasible for us to provide this kind of service for our work force. We do as much as we can, we follow all the rules. We have safety programs in effect, we want our people to go home safe. If there are other ways of doing activities, we would be willing to explore that, but we are concerned about the financial impact that this rule may cause.	For issues of genuine economic feasibility, the rule provides that controls need only be implemented to the extent economically and technologically feasible. However, the cost-benefit analysis concluded that the average employer will actually save money by complying with the rule. The rule itself avoided extensive paperwork and written program requirements in order to avoid unnecessary costs.
1.02	The [Small Business Improvement] Council strongly recommends that L&I conduct a more thorough analysis of small employers, and we volunteer our assistance toward that end. We believe the SBEIS conducted by L&I does not fully consider the financial impact on small business.	Costs were estimated based upon a representative sample of Washington businesses, including small businesses. In addition, L&I presumed that there would be a disproportionate impact on small businesses even though the SBEIS did not document such an impact, and the final rule and L&I's implementation plan are designed to mitigate that impact in a number of ways.
1.02	The department's small business economic impact statement projects a cost of $.39 per employee (5 minutes) to determine if the rule applies to that employee or not. This cost estimate is absurd. This 5 minutes at $.39	In the SBEIS analysis, an average of 5 minutes per job of manager time was given for the caution zone identification step. For small businesses 20 minutes of manager time was allowed to compile the results of this step, for large businesses

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	equates to a cost rate of $4.68 per hour. The state's minimum wage is $6.50. As shown above, a small business owner's time costs (assuming the owners annual earnings are about $35,000 per year) about $50 per hour for a profitable business. The department's $.39 estimate in understated by a factor of 1/10.6. Clearly, this estimate is inadequate and fails to meet the requirements of the state's Regulatory Fairness Act. Therefore, the department should not adopt this proposed rule due to the egregious error.	60 minutes was allowed. The identification step should not be mistaken for the more comprehensive job analysis step. The manager needs to merely assess if one or more of the risk factors outlined in the rule is present in a job, or group of similar jobs. A simple checklist and possibly a brief interview with the employee would allow the manager to quickly determine if risk factors were present. Because many jobs fall within the same occupational grouping (clerical worker, data entry person, bus driver etc.) a single representative identification effort will often cover several jobs. The caution zone identification step is carried out once at the beginning of the phase-in period(s), total cost for this step is annualized over 10 years. Because of changes in work practices it was assumed that 5 percent of jobs would need to be re- identified each year. As noted previously, the SBEIS results are presented as <u>average annualized per employee</u> costs. Because these costs are averages, some businesses with more complicated and varied jobs will experience higher costs for the caution zone identification step. (See CES narrative for more discussion of representative sampling of jobs for analysis.) The Regulatory Fairness Act requires the SBEIS and requires the department to make a determination about disproportionate impact on small business. Because the department presumed that there would be a disproportionate impact in spite of the SBEIS results, and has taken steps to mitigate the effects of the rule on small business in the final rule, any technical errors that may have occurred in the SBEIS had no substantive policy impact.
1.02	We are greatly concerned about the impact of the state and federal ergonomics proposals that loom before us. The time and resources that would be needed to enforce such standards would create a hardship for small business. The limits set forth in these proposals are impossibly restrictive. We, as owners and managers, struggle on a daily basis to succeed in business. These proposals work against us, requiring an investment that could, in many cases, destroy companies. Counting how many times an employee lifts a certain weight or bends his wrists more than a 30-degree angle is too daunting a task to comprehend. These regulations cannot be implemented. The regulations add additional requirements for small businesses as those with 10 or fewer employees must comply with the regulations after four years. The burden on small business particularly with those under 10 personnel could be very costly and force some out of business	L&I estimates that for most industries the cost of compliance will be small as a percent of gross income. For small businesses this will average 0.05% of sales. L&I is particularly committed to assisting small business to comply and will be providing technical assistance and training materials, as well as a longer phase-in period for small business.
1.02	We feel very strongly that these rules will impose considerable costs on small business, far beyond those outlined in the Small Business Economic	The SBEIS was based on the best available information. In any case, the department has assumed that there would be a disproportionate impact on small

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	Impact Statement (SBEIS). The SBEIS information regarding the time taken was based on information available at the time, not the actual rule.	business and has mitigated that impact in a number of ways, as described in the CES narrative.
1.03	**Underestimate of training time and associated cost** I cannot provide a general awareness education for $1.73 per year per employee, and I know it's over a three-year period. Multiply that by three, I mean that's minimum wage, and we can't take people off the line for that price, okay, including benefits, hourly wages, et cetera. The hazardous job training is the same, $1.24 per year per person. I think that's grossly inadequate, at least in the industry that I'm in. Same with marketing administrative costs and all the way down the line. I would really like to see more of those numbers and how they were extrapolated.	There is a difference between the number of employees requiring awareness education (level 2 population) and the total number of employees (level 1 population). Approximately 20 percent of the employees in the state will require awareness education, although the cost of $1.73 per employee represents an annual average for all employees (whether affected or not). A global training time of 40 minutes was utilized in the SBEIS and was costed out at the average workers wage (including benefits) for a given SIC. In addition 60 minutes of manager time and 1 dollar for handouts was included in the total cost estimation. Total costs were annualized over three years and divided by the total number of employees at the SIC level. Roughly 10 percent of employees in the state work in hazard zone jobs (and many of them may require only minimal training, depending upon the particular control methods selected by the employer).
1.03	We are also concerned that an adequate cost study has not been completed to reflect the true cost of implementation and compliance. As an example, you state that Hazardous Job Training will cost a small business $1.86 per employee to implement. Assuming a business has 300 employees, this means you believe it will cost $558 to complete this training. In that $558, the facility must pay a trainer, pay staff wages, and pay wages for staff to provide a resident care while other staff are participating in the training. It also means for $558, a facility must offer this training often enough to take care of high turnover most nursing facilities experience. We do not believe any kind of effective hazardous job training can be accomplished, for all employees, for $558.	Hazard job training is required only for those employees with jobs where a WMSD hazard exists and changes have been made, not for all employees. The department has estimated that 10 percent of the employee population (level 3) will be in a WMSD hazard job (varies significantly by industry). Costs were expressed on an annualized, per employee basis using the total number of employees (level 1 population-see background section above for more details on this process) as the divisor. Using the example in the comment, the annualized costs are $558 for the training of 30 employees in hazard zone jobs (using the estimated average of 10 percent in the workforce). Training costs were annualized over 3 years using a 5 percent discount rate and adjusting for the rule phase-in and employee turnover. The annualized cost for hazard training is about $18.6 per affected employee. The lump sum cost per affected employee – the amount that would be "available" to train the employee on average – is approximately $43.50. Depending upon the controls selected, hazardous job training requirements will be very limited in many workplaces. It is limited to the hazards of that job, and to the controls required to eliminate those hazards. In most cases this training can be provided as part of regular supervision, not requiring a special trainer. For example, replacing a handle-type control that requires 25 pounds of force to activate with one that requires only 3 pounds of force would not require extensive training for the employees using the machine.

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1.04	Criticism of the OSHA cost-benefit analysis with implications for the state of Washington The Department's Small Business Economic Impact Statement states that its costs are based on the 1995 cost estimates prepared by the US Department of Labor's Occupational Safety and Health Administration for an ergonomics rule proposed at that time by that agency. The US Small Business Administration did an analysis of the cost estimate prepared by the US Department of Labor. Their finding was, ". . . the costs of the proposed standard could be anywhere from 2.5 to 15 times higher than those estimated by OSHA…" This statement corroborates our statements above about the absurdity of the Department of Labor and Industry's cost estimates of complying with the proposed rules contained in the Small Business Economic Impact Statement. Thus, we implore the Department to not adopt the proposed rules in violation of RCW 19.85, which requires a reasonable estimate of cost.	The department used cost estimates developed by OSHA where it was appropriate to do so, but did not adopt OSHA's economic analysis as its own. The proposed OSHA rule differs significantly from L&I's proposed ergonomics rule. The OSHA rule is triggered by WMSD injuries and contains medical management provisions. L&I's rule is risk based and does not contain a medical management provision. The Small Business Administration hired Policy Planning & Evaluation Inc. (PPE) to analyze OSHA's proposed ergonomics rule. PPE made its own estimate(s) of the cost to comply with the rule and attempted to recreate OSHA's compliance cost estimate. Comparisons were made between the PPE estimated compliance costs and the OSHA estimated cost: ratios ranging from 2.5 to 15 to 1.0 are cited. The department has reviewed the PPE critique and has found several flaws in their analysis. The three most egregious errors in the PPE analysis are listed below: 1. PPE used an incorrect base number of WMSDs in its analysis. Therefore, PPE understated OSHA's own estimate by more than 40 percent. Correcting this error increases the estimate by 2.5 times, bringing OSHA's estimate within PPE's range. 2. PPE analysts assumed that 1 million additional WMSDs would be reported each year following promulgation of the OSHA rule. Even to the extent it might be true, this would only affect the cost of an injury based rule like OSHA's, not a hazard based rule like L&I's. Finally, the estimate suggests that valid claims have gone unreported. To the extent that is true, those costs are not the result of the rule, but of existing legal obligations, and they do not represent new costs. 3. PPE analysts overestimated control costs. OSHA conducted an extensive review of ergonomic hazard control costs and established per worker control costs for all of the SIC (3 digit level) categories to which the federal proposal was meant to apply. Their typical per worker control cost, after netting out productivity improvements from design changes, was about $1,000 (present value). The PPE analysts, providing no basis for their assumptions, assume that hazard control costs will range from $5,000 to $50,000 per worker. When faced with a choice between a number that has been developed using the best available evidence and one provided without any substantiating information, the department relied on the more credible data.
1.05	**Telecommunications Industry Costs** What process did the Washington State Labor and Industry Department use to determine operational and financial impacts on telecommunication companies and other utilities operating within the state, in their attempts to analyze and redesign jobs to fit within the acceptable risk factor levels as	All industries, including telecommunications, were represented in two surveys conducted by the department in 1998 and 1999. The first survey obtained information on the degree of exposure of workers in each industry to several physical risk factors for MSDs; the second survey obtained information from employers who already have instituted ergonomics programs on the costs incurred

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	outlined in the standard?	by them to carry out various critical steps to identify and control risks as well as to train employees. These sources, together with cost data on controls by industry obtained from OSHA, provided the evidentiary basis for the department's cost analysis.
1.06	**Construction Industry Costs** "The cost to the construction industry has not been thoroughly analyzed by Labor and Industries. Issues needing to be addressed in the economic impact statement are the transient nature of the workforce, cost of personal protective equipment, cost of ergonomic tools and equipment, cost of workplace evaluations and the cost of training, Job assessment, awareness training, engineering and administrative controls further impact production, especially during time sensitive phases in construction."	The department's analysis of costs and benefits to the construction industry has been thorough. It included estimated costs of personal protective equipment, ergonomics tools and equipment, workplace evaluations, training, job assessment, awareness training, engineering and administrative controls. Furthermore, the department has weighed these costs against the large dollar amounts of workers' compensation claims payments to construction workers who sustained musculoskeletal disorders and determined that the ergonomics rule will provide a social benefit to costs of compliance ratio of 4:1 in construction. The department's analysis took into account the reported hours of full time equivalent workers, and applied a turnover rate that was higher than that for general industry.
1.06	The second concern is that the fact that the proposed WISH Rule specifically includes the construction industry in which the "caution work zone" assessment presents unique challenges because of the fluid nature of our varying work sites and our multi-skilled labor force. We have evaluated the cost impact on a construction company of our size and estimate a cost of approximately $12.5 million dollars would be spent over the next five (5) years to fully analyze, assess, retool, and fully implement the proposed WISHA regulation. This is an immense cost for implementing a proposed safeguard to our workers given the vast amount of ambiguity inherent in this type injury.	The cost estimate in this testimony is extreme, and no underlying data to support it was made available to the department. The department's cost-benefit analysis is based on the best available evidence, and uses accepted standard principles of economic analysis. The CES narrative provides additional information on provisions intended to reduce the impact on the construction industry, including the portability of employee education and the allowance for representative sampling for job analysis. The injuries that will be prevented by this rule are not ambiguous but are precisely defined in the rule and explained more thoroughly in the CES narrative.
1.07	**Garbage and Recycling Industry** Since each waste collection worker's job is essentially unique, a thorough hazard analysis would essentially require every supervisor to evaluate every worker's route each day of the week. The cost to one moderately-sized garbage company would be prohibitive and would result in unacceptable increases in cost of service to the consumer. We believe our industry already has a good understanding of the hazards faced by our employees. There simply is no need for "caution zone determination" and "job analysis" to be performed. Rather, a procedure whereby the screening and job analysis are combined into one step makes much more sense. The employer then can make the determination whether or not a specific job or task presents a risk,	We recognize that for a certain fraction of jobs the risks and their control measures will be obvious. We have already built into our estimates the assumption that some employers may choose to skip the ID/analysis step and go right into fixing the hazard. If there is no hazard and the awareness education has been provided for employees in caution zone jobs, the employer will be in compliance.

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	and take appropriate corrective action if necessary. The employer should not, however, be responsible for hazards beyond its direct control and/or ability to remedy.	
1.08	**Office Environments** For the office workplace, WISHA has greatly underestimated the cost burden that will be placed on employers under this standard. The following are <u>average</u> COT member costs for workstation fixes and do not include installation or employee training, which can easily double these costs: Sit/Stand workstation $3,235 Office chair $750 Keyboard tray $350 Headset for phone $200 Magni viewer $265 Document holder $30 Footrest $40 Voice recognition software $400 The state's estimate for the cost and time of an assessment is also greatly underestimated. Full assessment of the needs of individuals takes about one hour per person. This is much more costly than the state's estimate. The time for identification and hazard assessment, the time and cost for baseline training for the assessor, and the cost of "fixes" must be corrected in the estimate. According to estimates by our members, caution zone job identification would take 25 minutes per person (10 minutes for the evaluator, 10 minutes for the employee for observations, interview, job sampling and 5 minutes per person for travel). The hazard analysis would take 145 minutes per person, which would include: ➢ 45 minutes for evaluator ➢ 45 minutes for employee ➢ 5 minutes per person for administration ➢ 30 minutes for report writing/record keeping (not required by the standard but prudent) ➢ 20 minutes per person for training Risk Reduction would take 120 minutes per person and includes administration, follow-up and trial and error.	The listing of costs for office work station equipment assumes EVERY work station will need EVERY item listed. In fact, most office workers are not engaged in intensive keying or in any of the other specific risk factors described by the rule and therefore no controls will be required. The department's estimate of worker exposure to risks found that, in the employers' own estimation, the fraction of workers exposed to one or more physical risk factors was on the order of 10% overall. In addition, the department used standard capital cost procedures by presenting capital equipment costs not in their lump sum form, as the writer does, but in a present value form annualized over 10 years. Given the physical risk factors identified in the rule, the department believes its assumption of 1 hour per job for analysis is more than adequate, especially given the fact that in the office setting many of the jobs are similar.

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	Based on the experience of one of our members in Washington, the direct costs for one facility for equipment upgrades alone directly related to caution zone jobs would be $25,000. The indirect costs of implementing the standard provisions to all employees with even minimum risk would exceed $250,000. These indirect costs include the costs of personnel time, travel expenses, analyses, training and additional office equipment for those in minimum risk situations.	
1.09	**Nursing home Industry Costs** "L&I is imposing these rules on every employer without knowing how effectively each requirement reduces injuries, what it will cost the employer, and how hard the rules are for employers to follow. As a long term care provider, we are largely funded by Medicaid and Medicare dollars. Aging and Adult Services Administration has stated to the Washington Health Care Association that they cannot front fund these costs for Medicaid, nor is there any provision in Medicare to fund these new costs leaving the burden to providers to absorb these costs or shift the costs to private pay residents. Long-term care providers cannot support any regulation that it's largest payor, the state of Washington, is unwilling to fund."	The Department of Labor and Industries expects that the benefits to nursing homes in reduced premiums and other indirect savings from reduced occupational injury outweigh the costs of purchasing equipment or making changes in lifting methods. These expected results are supported by the scientific literature: Garg (1999) Garg and Owen (CITE) and Fragrala (1994, 1995) and by experience of the Washington State Department of Labor and Industries zero-lift project. Also, nursing homes participating in the L&I zero-lift project are receiving front end costs for ergonomic controls. In addition they may take advantage of job modification funds from L&I after an injury has occurred to assist in preventing future injuries.
1.09	Considering the half a million dollars associated with the Department of Labor and Industries' pilot program in the nursing home industry, upfront costs of a half a million dollars for one segment of an industry for one segment of a problem. These costs that L&I projects cannot be realistic.	In fact, the nursing home initiative confirms the basic approach of the cost-benefit analysis: The benefits outweigh the costs. The Washington State Fund reduced premiums for employers who participate in this carefully defined voluntary project precisely because its analysis concluded that the injury costs would be reduced. Nursing home employers have realized significant cost savings (in excess of their expenses) within a short period of time by implementing ergonomics solutions. The premium reduction for employers participating in the nursing home initiative, which amounts to roughly $200 per employee in the first year, represents anticipated cost *savings* in workers' compensation claims costs, which can in fact be used to cover "up front" costs and which will be recovered in future premiums. In addition, the initial expenses involved in implementing a "zero lift" program for patients are not necessarily typical of the average cost of ergonomics solutions, which are often modest. The cost-benefit analysis is based on a comprehensive review of the best available data to produce average costs – and benefits – for all industries.
1.09	Employers cannot afford ergonomics experts on staff to do ergonomic assessments. The rule 296-62-05130 is overwhelming in its requirements	Although costs for certain industries will be higher than the average for all industries combined, the benefits in those industries will still greatly outweigh the

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	of what the employer must do. With high turnover, the awareness education training will be conducted all the time, not every three years. The average cost to equip a nursing facility with resident transfer equipment is $20,000, the economic impact statement of $31.47 per employee annually underestimates the cost of these regulations. The rules say the employer must fix any hazard in a caution zone job. These fixes are expensive and must be weighted against the federal and state rules and regulations regarding caring for nursing home residents.	costs over time. When calculating capital equipment costs the department used annualized net present value per employee, not the lump sum cost of the equipment. This is the appropriate method when costs are incurred at different points in time and where equipment is depreciable.
1.09	"…in the age of escalating health care costs, it is our customers who will shoulder the burden of absorbing these questionable costs. I encourage you to further examine this issue in light of the impending crisis of Medicare funding due to the explosion of the senior population (that is living longer than ever before) that is coupled with increasing costs for health care."	For the reasons stated above, and because the compliance costs as a percent of the total revenue are minimal, the department anticipates no change in health care costs to occur as a result of the ergonomics rule. In the long term, the rule will reduce costs, benefiting consumers and helping to control long-term health care costs (as well as reduce permanent disability resulting from WMSDs).
1.09	Your small business economic impact statement estimates the average annual cost to small employers will be $31.47 per employee. Washington is enjoying a full employment economy creating stress on my facility to maintain staff. The costs for my facility to comply with this new regulation will skyrocket due to high turnover. High turnover is an extreme problem throughout the nursing home industry. A levy of $31.47 per employee, you estimate is frightening to think of. During the last 12 months of 1999, my facility hired 40 employees, you can see the horrible impact. We generally have 99 employees on our staff, you can see the terrible financial impact this rule would have. An additional position to manage this rule is another burden that we simply cannot bear.	Employee turnover was factored into the SBEIS cost analysis, using employee turnover numbers averaged at the SIC level. Businesses with higher than average employee turnover rates will experience slightly higher training and management costs when complying with the rule (just as businesses with lower than average employee turnover rates will experience lower training and management costs). However, because hazard reduction through engineering and administrative controls, which is by far the largest cost sub-component of the rule, is not affected by this factor the department does not believe an atypical employee turnover rate will dramatically change the cost of compliance. In addition the basic ergonomics awareness education is fully portable and valid over three years. Thus a new employee that had recently received basic ergonomic awareness education at another establishment would not require further awareness education. Similarly, an employee returning to the same business establishment after a brief absence would not need to retake the basic awareness education, provided the initial training had taken place less than three years ago.
1.10	**Transient Worksites/Workforces** Because of the temporary occupation of the worksites and the transient nature of the workforce, ergonomic solutions are not likely to be neither straightforward nor fixable without the need for intensive job analysis. The department's estimation of annual costs per employee of $0.00 to $1.16 for analyzing caution zone jobs does not represent realistic figures for carrying out this task.	In the SBEIS the time given for caution zone job analysis ranged from 1 to 5 hours depending on SIC and business size. It was assumed that the employer could carry out the caution zone analysis step, which only needs to be conducted once. The total cost for this step was annualized over 10 years, but because of changes in work practices it was assumed that 5 percent of jobs would need to be re-analyzed each year. Caution zone job analysis results are presented as average annualized per employee costs. Because these costs are averages some businesses with more

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		complicated and varied jobs will experience higher costs for the caution zone job analysis step. It was also assumed that representative job sampling could be used for caution zone job analysis rather than individual analysis for every employee (see CES narrative).
1.11	**Manufacturing** "When you make manufacturing overhead too costly, manufacturing is going to go to other areas of the country or out of the country to do business. If our shipping person can only lift six pounds per hand for no more than two hours a day, we will be forced to redesign packaging for shipment, double staff, and the cost of repackaging will be phenomenal to the telecommunications industry."	The rule does not limit shipping personnel to lifting six pounds per hand for no more than two hours a day. The final rule makes it explicit that employers are not required to change employment hours in order to comply with the rule. The department does not anticipate any change in business locations as a result of the ergonomics rule.
1.12	**Sheet Metal Industry Costs** Unlike employers with fixed worksites and stable workforces, sheet metal "caution zone jobs" will be less easy to identify. The department's estimation of annual costs per employee of $0.22 to $0.39 for identifying caution zone jobs is grossly understated for our membership – contractors with highly skilled union workers performing a variety of tasks on a number of jobsites. The physical risk factor contained in the rule will necessitate scrutinizing every task at every jobsite. This process will require that person(s) responsible for the assessment will have time, specialized knowledge and tools to carry out the investigation process. Because of the temporary occupation of the worksites and the transient nature of the workforce, ergonomic solutions are not likely to be straightforward nor fixable without the need for intensive job analysis. The department's estimation of annual costs per employee of $0.88 to $1.16 for analyzing caution zone jobs does not represent realistic figures for carrying out this task.	The writer misunderstands the cost analysis. These projected costs are on a per employee basis, not a per "affected" employee basis. The department surveyed many businesses in the construction industry as to the number of their workers exposed to various physical risk factors for 0-2, 2-4 and more than 4 hours. Our estimation of the fraction of the workforce in the construction industry exposed to one or more of these risk factors was based on this survey data. For hazard jobs in the construction industry as a whole this was 17% of the workforce for small employers and 25% for large employers. For caution zone jobs this ranged from 33% of the workforce for small employers to 37% of the workers for large employers. When presenting our cost numbers in the SBEIS we divided total costs by the total employment in the industry, not just by the number of workers in caution zone or hazard zone jobs. This does not affect the conclusion in the cost-benefit analysis that the benefits will be considerably greater than the costs.
1.13	**Food processing** One Washington food processor, with annual peak employment of 1,500, submitted to the Department the following: Since 1995 alone, [company name] has invested over $3.2 million dollars to modify and or purchase specially designed equipment. The purpose was to eliminate and/or reduce many physical job tasks requiring repetitive type motions that are associated with soft tissue injuries. The above does not include all other funds spent on assuring a safe work environment for our employees in all other areas of safety." [The company provided to the Department capital budget figures and specific jobs involved and what repetitive motions were reduced or eliminated.]	These projected costs are on a per employee basis, not a per "affected" employee basis. The department surveyed many businesses in the construction industry as to the number of their workers exposed to various physical risk factors for 0-2, 2-4 and more than 4 hours. Our estimation of the fraction of the workforce in the construction industry exposed to one or more of these risk factors was based on this survey data. When presenting our cost numbers in the SBEIS we divided total costs by the total employment in the industry, not just by the number of workers in caution zone or hazard zone jobs. Writer assumes all workers in firm are in problem jobs. Secondly, it is impossible to tell if the equipment installed by the company was installed specifically to address ergonomic issues or whether this equipment was installed primarily for purposes of increasing worker productivity.

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	The average annual cost per employee for ergonomic engineering controls at this one Washington food processor in the last five years is $426.67. Compare this to the Department's estimate of $20.65 as the annual cost per employee that a large business would have to spend under the proposal. The proposed requirement to be as effective as national organization "best practices" is onerous and would be extremely extensive as the above example indicates. Likewise, a $1.05 average cost per employee to conduct job analyses of virtually all jobs in manufacturing in the state is not realistic at all. Expanded education and record keeping alone would exceed that amount without hiring an ergonomic consultant or implementing a single control measure. That type of support will cost far more than the $1.49 per year per employee average stated in the referenced table! The economic impact of this proposal is grossly understated to make the so called benefits appear to be more attractive. That is another reason the proposal is flawed and should be withdrawn and replaced with enhanced voluntary education. We are not aware of any economic impact studies done for the state's food industry. However, a November 1999 analysis of the federal OSHA proposal by the independent consulting firm Prime Consulting Group, Inc. provides a related example of ergonomic costs to the food industry. A copy of the Executive Summary of this report is being provided to the Department of Labor and Industries under separate cover. The report demonstrates the extreme costs associated with engineering controls as summarized in the following statements	If productivity is increased this represents a reduction in per employee costs and should be used to offset, in whole or in part, the costs of the equipment. The department does not expect consultants will be needed for more than a small fraction of hazard zone jobs. In addition, small businesses will have the advantage of a longer phase-in period to comply with the rule, which means that analysis and control toolboxes specific to their industry will have already been developed and will be widely available. See the cost-benefit analysis for a more detailed discussion. There is no requirement in the proposal or the final rule that all businesses be "as effective as national organization "best practices." The rule requires the identification and reduction or elimination of hazardous exposures. Best practices are one *option* available to employers to demonstrate compliance. The evidence for the statement that a food processor spent $427 per employee per year on ergonomic controls does not support a conclusion that compliance with the rule would cost this much. In most cases these costs were for the purchase of equipment that "eliminated" certain manual activities such as bagging cherries, hand stacking cans, hand feeding cans or hand packing bags. However, the rule requires that exposures be reduced below hazardous levels, not eliminated. The evidence submitted did not provide exposure levels before and after the modifications, but it is likely that the engineering changes went well beyond what the rule would have required. In some cases, costs were reported for measures bearing little relationship to the rule such as eliminating the need to get on and off a forklift to open and close doors The analysis performed by Prime Consulting Inc. for the Food Distributors International trade association addressed the requirements under the proposed OSHA ergonomics standard. This rule is significantly different from the rule proposed by Washington State in several important respects, including requirements for medical removal protection. However, since some of the commenters raised the issue of the high costs presented in this analysis, we believe a critical review of the FDI report is in order. Unlike L & I's cost analysis, which was based upon survey results from a broad selection of industries, the FDI report was not based upon any survey of actual businesses conducting actual ergonomics hazard reduction activities. Instead, the analysis drew upon the advice of consultants and on assumptions. Several of these assumptions appear extreme and far beyond anything required under the

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		Washington State proposed ergonomics rule. These are as follows: For their Scenario 1, in which the ergonomics program required by OSHA is set up, hazards are identified, and job changes are made following worker injuries: Estimated personnel time to set up the ergonomics program are far higher than we believe is reasonable given the requirements of the Washington rule. They assume 440 hours PER MONTH of management and employee time plus 720 hours per month of support staff time. Similar gross overestimates of personnel time are used throughout this document. Estimated ongoing personnel time to manage the ergonomics program are far higher than we believe is reasonable given the requirements of the Washington rule. They assume 98 hours PER MONTH of management and employee time plus 40 hours per month of support staff time. They assume covered WMSD claims are filed by 25% of the workforce annually. This rate is far higher than is typical for firms in the Washington State Fund where the average WMSD claims rate is less than 4% per year. They assume that there are no control solutions available besides reducing the pace of work and losing 25% of the productivity of the workforce. No adjustment of wage rates for this assumed productivity loss is made. This is doubly unrealistic since solutions that lead to an increase in productivity have been identified by OSHA's consulting ergonomists. In their higher cost scenarios they assume that ALL jobs and all equipment in the plants will have to be changed and/or the entire distribution center will have to be rebuilt from the ground up. It is this extreme scenario which generates the widely-quoted estimate of $26 billion for this one industry. In sum, this analysis is based upon extreme and unrealistic assumptions. We believe our own cost analysis, based upon employer survey responses and upon assumptions consistent with the requirements of our proposed rule, to be an accurate projection of what will be the experience of businesses once implementation begins.
1.13	We are very concerned about the cost of compliance to this rule and our competitive position. Last year our industry association completed a study of the cost to comply with OSHA's proposed ergonomics rule. A copy of this report accompanies this letter. The analysis was based on the draft rule published earlier and the remedies OSHA has imposed or suggested	The cost analysis referenced here does not apply to the L&I proposal or final rule. Although control measures will be comparable in many cases, the federal proposal includes items that the state standard does not (for example, the state standard has absolutely no "medical management" requirements, so it is not clear how any employer would incur those costs). In addition, to assume that an employer with

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	under earlier compliance efforts based on their general duty clause. Under best case circumstances, the average grocery distributor would face one time cost of $480,000, or by L&I standards (identification of at least one "caution zone job") $1,580,000 to implement job hazard analysis, prevention and control procedures, medical management, etc. Job changes would be needed at a minimum of ten job functions.	one caution zone job (which would be the only job requiring analysis and, if hazards were in fact identified, hazard correction) would incur costs of either $480,000 or $1,580,000 is clearly in error.
1.14	**Maritime Industry** "We estimate that this rule could potentially cost the (maritime) industry $54,000,000 in additional annual labor costs. We believe that this cost would have a negative impact on the discretionary cargo that is currently shipped into Puget Sound ports. We can not afford to have high labor costs force discretionary cargo to ports in Canada, Oregon, and California."	The department has evaluated the impact of the rule on all industries (including the maritime industry) and has determined that maritime is not significantly different from other industries in that benefits of the rule will outweigh the compliance costs, which are minimal. The comments estimating $54,000,000 in additional labor hours as a result of the rule are based on excessive estimates of training costs and training times and do not take into account the anticipated benefits from the rule. The final rule also makes clear that substituting multiple part-time employees for full-time employees, upon which the maritime industry based much of its cost estimate, will not be a required control measure under the rule. Because L&I's anticipated benefits to the maritime industry of reducing musculoskeletal disorders outweigh the costs of compliance to employers (which are minimal compared to sales), and because significant productivity gains are expected, it is anticipated that discretionary cargo patterns will not change as a result of the rule. The rule also requires control measures only to the extent they are economically and technologically feasible. It is worth noting that British Columbia and California already have ergonomics rules.
1.14	"We believe that the Maritime Industry has certain unique characteristics and challenges that need to be recognized in the ergonomics rule."	The maritime industry has a significant number of WMSDs, and exposure of shipyard workers is supported by the literature (Bovenzi et al , 1980; Letz et al 1992; Torell and Sanden, 1988). The department has considered the unique features of the Maritime industry and the final rule takes these into account. For example, the provisions for portable education, feasibility, employer choice of job analysis methods, and the explicit statement that employers are not required to reduce work hours all address industry concerns.
1.15	**Municipal Employers** These rules will impose a costly, time-consuming experiment on all	The WISHAct applies to public, as well as private employers. The Administrative Procedures Act requires that public employers be treated in the same manner as

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	employers without guaranteed results. We believe it unfair to expect employers and taxpayers to pay for costly, unproved, and unscientific regulations, especially in light of the recent passage of I-695, and its devastating effects on many local government budgets.	private employers in agency rulemaking. As the department has shown in its Cost-Benefit Analysis, the cost to comply with the proposed ergonomics rule is *$36.16* per employee for SIC 9 and the benefits are expected to substantially outweigh the costs. RCW 43.135.060 (referred to as the "unfunded mandates" statute in some comments) does not apply to these rules for several reasons. First, RCW 49.17.020 (3) has applied the WISH Act to local governments since 1973, and thus predates the effective date of RCW 43.135.060. Second, RCW 43.135.060 regarding the prohibition of new or extended programs to local governments does not apply because RCW 43.135.060 applies to actions by the "legislature" only. *City of Seattle v. State*, 100 Wn.2d 16, 666 P.2d 359 (1983). Third, the provisions of this law do not apply because there will not be an "increase in service levels" to the public. In *State v. Howard*, 106 Wn.2d 39, 43, 722 P.2d 783 (1985), the Supreme Court required that the local government demonstrate an "increase in services to the public" in addition to increased costs. While the law does not apply, however, the extended implementation schedule will help public employers to plan and prepare for compliance. The requirements of the rule are neither unproven nor unscientific (see CES narrative for details)
1.20	**Cost savings, increase in productivity, morale etc.** The primary concern I have in the course of all of this presentation is that there's no identification of the productivity output measurements in putting together a cost benefit analysis. There's so much focus on the injury event and that sort of thing that in terms of the perception of the employer, I think it would be a bit more enthusiastic if there were a way to create a subset of factors that identify specifically productivity measurements. And I think that's an important part of ergonomics is that productivity measurement.	Productivity improvements from ergonomic solutions are well documented in the literature. For more information on productivity improvements see the departments' Cost-Benefit Analysis

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1.30	**Economic advantage from ignoring the rule** "Contractor's who choose to ignore the standard gain an economic advantage in an industry driven by 'low bid'. The State of Washington will actually encourage this process, as it is required by law to accept the 'lowest bid'."	While occupational safety and health concerns are not a condition of *bid* acceptance for most public works contracts in the State of Washington, it is normally a condition of the *contract* that employers follow all applicable labor laws. In the event of a breach of contract, those contracts may be severed. Further, occupational safety and health on all Washington public construction contracts is regulated by WISHA. An employer who makes a bid based on the assumption that he or she will not comply with safety and health is potentially subject to a penalty for a willful violation of the law (up to $70,000 per violation). In addition, if a contractor has underbid a job and the contract requirements to follow the law are enforced, the contractor's estimates will be inadequate and the contractor will lose money on the job.
1.30	"Employers that choose to ignore the standard gain an economic advantage: Add to the standard language that heavily penalizes those employers that cannot document any analysis, training or other attempts to comply with the standard. Make it a level playing field."	Implementation of this rule will help to level the playing field. It is the absence of a rule that gives employers who avoid safety and health measures an unfair advantage. The penalty provisions of the WISHAct apply to this rule, as to other rules, and subject employers to citations of up to $7,000 for each serious violation and up to $70,000 for each willful violation.
1.40	**Centralized planning** "Centralized planning nearly always sounds good but in practice, the free market identifies industries best practices a whole lot better than government."	This rule does not replace the free market with centralized planning. It establishes minimum, clear performance expectations for businesses to provide safe and healthful workplaces as required by law and it provides flexibility for employers to identify and implement best practices.
2	**Unintended Consequences**	
2.01	REDUCED EMPLOYMENT HOURS " When I look at – you also have in here that we must reduce the hazard. Well, when I look at where the hazard is, I guess in my facility, and in interpreting that, the hazard or where the zone is my resident. Now, am I going to eliminate my resident? I don't have a choice. I can't – I don't see robotics coming in and taking care of a 99-year-old man. I don't think that's feasible. I don't see that, you know, I can have a conveyor belt with these residents coming through. I mean, that doesn't – I don't see how that's going to work for us." " What about the affect of automation on business and industry over the last couple of decades? Many types of tools and equipment have been automated making the work less physical in nature. How does L&I account for the data when clearly many of the alleged risk factors have been eliminated in many industries? Also, what about industries, masonry specifically, where automation is not feasible? Further, who determines feasibility?"	There are almost always less expensive and more easily implemented controls than complete automation. Often, the preferable control is to provide mechanical assistance or semi-automation for those few tasks that machines are able to do better than humans. For example, as other commenters have indicated, the nursing home initiative shows that promising ergonomics solutions are available, even in the context of patient care.

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	" It is also apparent that unions don't understand this rule will force employers to look at complete automation of their operations. This action alone would eliminate employment opportunity and reduce their membership." ": this rule will force automation and significant job losses on food industry workers…, the professional safety experts, have told us that the only way they can comply with this rule is to recommend automation, taking employees out of the equation. Additionally, our professional food safety experts have told us that nearly every job in the grocery store would be covered by this rule. "	
2.01	They will also lose hours of work because the only way to keep them within the limits set by your rules is to have them work less. Jobs will be lost to automation wherever economically feasible. Employers who read this and understand its consequences will eventually refuse to hire full-time, 8-hour-per-day workers as a result of this ridiculous intrusion into the work place.	The final rule states clearly that if an employer has implemented all other feasible controls and a hazard remains, the employer is not required to reduce exposures further by replacing full time employees with part time employees or otherwise reducing an employee's hours of employment.
2.01	"I can visualize employees taking 2nd and 3rd jobs – doing the exact same thing for periods or repetitions that exceed those mandated in this proposal, only they will be doing it for different employers. I see nothing in the proposed regulation that says employers have to ask their employees if they have performed the same job at another workplace in that same day."	The final rule makes it clear that employers are not required to control hazards by reducing hours of employment even if there is no other feasible means of correcting the hazard.
2.02	**Increase Cost of Products** Another significant reason to re-look at these regulations is the inequity to Washington and small and large businesses with out-of-state competition. These regulations as written are going to be costly to implement and increase the cost of products across the board. Tree fruit growers have no ability to pass on the increased costs associated with the implementation of such rules. Not only will tree fruit growers not be able to pass on the increased costs they also will be placed at a tremendous competitive disadvantage with tree fruit growers from other states. Tree fruit growers will not only be forced to absorb the increased on-site costs but will absorb the costs of their suppliers. Agricultural suppliers and equipment companies, etc. will raise their prices to cover their increased costs and the growers will not be able to pass that cost to the consumer.	The comments assume a considerable net cost; the cost benefit analysis, using the best available evidence, determined that there will in fact be a net *benefit* to employers. The cost-benefit analysis demonstrates that the rule does not threaten the viability of any entire industry and therefore the rule meets the legal test of economic feasibility. For individual employers, where costs can genuinely be neither absorbed nor passed on (which is generally *not* the case) and competitiveness is significantly damaged , the control may not be not economically feasible and therefore not required. However, experience in a range of industries has shown that relatively low cost ergonomic solutions are often available. To the extent up-front costs to implement ergonomic solutions are necessary, the current situation puts employers who show the greatest concern for their workers at a short-term competitive disadvantage. The rule would correct that by "leveling

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		the playing field" within Washington. Finally, the long-term effect of the rule will generally be reduced employer costs in workers' compensation and in hiring and training replacement workers.
2.03	**Avoid locating in Washington** You are going to hurt the economy with these regulations. There is no way around that if you go on with these regulations. You will cost the state thousands of jobs and you will be dissuading potential employers from coming to our state with new jobs. In essence, you need to look at the big picture here and understand the effect of your actions to the economy of the entire state over the long run.	The comment is based on the assumption that the net effect of the rule will be a massive cost to businesses in the state of Washington. The cost benefit analysis, based on the best available data, was unable to identify any such cost. In fact, the analysis identified a net economic *benefit* to the rule.
2.03	There is another alternative for employers, and as stated by the woman who represented the hop growers at the Yakima public hearing, her words were, "We will be forced to move our operation to other states where we hold land and do business." " If the demands of regulation continue to expand, smaller companies such as Ballard Brass will have no choice but to close the doors and suggest employment for twenty persons elsewhere" " these rules create an atmosphere of anti-business in the state of Washington, thus discouraging recruitment and retention of business in the state." "This proposed ruling, is going to impact the small business world in so many ways and may put many small business owners out of business"	Employers will not have to implement controls that are not economically or technologically feasible. The final rule is the least burdensome alternative that will achieve the necessary level of worker protection. A more complete discussion of these issues can be found in the CES narrative.
2.04	**Decline in productivity** We would need at least a 50 percent larger footprint to carry the same inventory in one tier racking. You cannot find land in the Kent Valley today large enough to accommodate that size facility, and you would therefore require us to move further out, engendering more urban sprawl. That does not count the capital costs, even if we could expand our Kent facility in place. At $100 to $105 per square foot in construction and equipment costs, the replace costs for these facilities runs in the tens of millions of dollars. Then there is the question of productivity. To pick the same order when product is spread over 50% more area will dictate at least a 25% reduction in order picker productivity. The rules proposed by the Department of Labor and Industries will absolutely increase costs of management and overhead, and subsequently, the costs of all services and products in this country.	The comment assumes that the rule requires "one-tier racking" and would require implementation of controls even where they were not economically feasible. It does not. In fact, it explicitly indicates that employers may choose among a variety of controls and employ these only to the extent "economically and technologically feasible." It does not specify particular controls, beyond a general preference for engineering and administrative controls that do not rely primarily on employee conduct for their effectiveness. General comments about increased overhead and management costs assume a significant net cost to the rule. The cost-benefit analysis determined there would be a net *benefit* to employers, which would result in decreased costs. Numerous comments in the rulemaking file (see CES narrative) indicate that ergonomics efforts typically result in improved productivity and quality as well as decreased compensation costs rather than increased management and overhead

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		expenses.
2.05	**Cost to employees** "There appears to be little to no consideration for the cost of the employee. Our union field employees supply their own hand tools and many of these individuals will have to replace their current tools. This has the potential to cost thousands of dollars to the individual employee.	The comment presumes that the rule will require widespread and immediate tool replacement. L&I does not believe this to be true. The OSHA compliance costs used in the L&I analysis included the cost of replacement of both powered and manually operated hand tools. Those cost were considered regardless of whether employers or employees paid for those tools, so such costs were in fact considered in the analysis. Although newer tools may be more expensive, having a longer productive life will mitigate costs. In addition, better tools improve worker productivity because they reduce fatigue. It is therefore not unreasonable to expect overall costs would not exceed the amount spent in normal replacement costs of tools. The long phase-in provides workers and contractors ample time to plan for replacement of tools with appropriate ergonomic solutions in mind. Employees in the State of Washington contribute in the payment of workers' compensation premiums and therefore will share in the expected savings from injury reduction, whether or not they share in the costs of compliance.
2.50	**Don't prohibit part-time workforce, temporary employees, or automation.** Clarify that the rule does not prohibit employer's use of a part-time workforce, temporary employees or the use of automation (where allowable) in the workplace.	It is not clear to L&I how to clarify an issue that the rule does not raise and that would be outside the scope of WISHA's rulemaking authority. The rule does not prohibit any of these activities, nor is it clear how it could be interpreted as doing so.
3.00	APA Requirements	
3.01	**APA Requirements not Met** "In addition, we are concerned that the agency has not appropriately followed the requirements of the Administrative Procedures Act in identifying alternatives to rulemaking, the least burdensome alternative, coordinating with federal entities, and in conducting its economic impact analysis." "In addition, we are concerned that L&I has not appropriately followed the dictates of the Administrative Procedures Act to (a) identify alternatives to rulemaking; (la) implement the least burdensome alternative; (c) coordinate with federal entities; and (d) conduct a thorough and accurate economic impact analysis."	The CES narrative discusses L&I's compliance with these requirements, most of which apply to the adoption of the final rule (rather than the proposal).

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3.02	**Cost-Benefit Analysis not done as Required by APA** The last is a detailed cost benefit analysis has not been done. We strongly believe that a detailed cost benefit analysis conducted by an independent third party should have been a requirement and should've been done previously to this date. Furthermore, WISHA has not made the required determination of the cost its proposed rule will impose on Washington business. Therefore, no meaningful determination can be made that the benefits of the proposed rule outweigh its costs. In light of both of these failings, WISHA cannot possibly establish that its proposal is the "least burdensome alternative" for business that will achieve the proposed rule's stated goals.	The Administrative Procedures Act (RCW 34.05.328(1)(c)) requires that the department "*Determine that the probable benefits of the rule are greater than its probable costs, taking into account both the qualitative benefits and costs and the specific directives of the statute being implemented*." This analysis is required prior to final adoption, not prior to the proposal (although a preliminary analysis was reflected in the department's Small Business Economic Impact Statement (SBEIS)). The department has completed a detailed Cost-Benefit Analysis (CBA), and the final decision was based on that analysis. The analysis is part of the rule file and available to the public. The APA does not require that a CBA be conducted by an independent third party and the department determined that it had qualified staff to do the analysis in accordance with the law. The department did an analysis of alternatives and concluded that the rule is the least burdensome alternative (see CES narrative for details)
3.03	**Pilot Programs** "A pilot program will also answer the question, which is logically on the minds of many employers in the state. "How will the state determine liability on a repetitive motion condition which is controversial with regard to the source of the condition of life related or work related?"	Such a project might be informative, but it is outside the scope of this rulemaking. The rule has no relationship to determination of liability, but focuses on the reduction or elimination of specific risk factors for which there is a wide body of credible evidence. The source of a particular WMSD will not be at issue in an employer's implementation of the rule and its requirements.
3.03	"We do not understand why L&I refuses to work with the Association of Washington Business who has repeatedly offered to help L&I develop technical assistance programs to participate in pilot programs to find out what is truly effective in preventing injuries." "Beta testing is standard in many industries, including software. Is there a reason that L&I is unwilling to beta test these proposed regulations on a few companies, versus being using the entire state of Washington as guinea pigs." "Before enacting these new regulations the Department of Labor and Industries should do a pilot or test program to see if they work and how they work."	Pilot rulemaking was considered and rejected for four reasons. First, pilot rulemaking is discretionary and the process of rule development conferences and advisory committees was an appropriate and effective alternative. Second, pilot rulemaking is best suited to situations where an agency intends to issue a highly specific, inflexible and experimental regulation and feasibility of compliance is highly uncertain. In this case, however, the department decided to move ahead with a proposal which was highly performance oriented, included flexible choices for compliance, was based on sound scientific principles and data, and incorporated the notion of feasibility as a self-limiting factor. L&I concluded that a rule designed in this manner would not benefit from pilot testing. Third, the department decided to incorporate a six-year phase-in period that would allow business, labor and government to work together after rule adoption on demonstration projects which would accomplish many of the purposes of pilot programs. Fourth, over the past 10 years individual companies, trade associations, unions and others have undertaken a wide variety of pilot ergonomics projects. The rule is based in many ways on this experience and further "beta testing" is not necessary.
3.04	**L&I should review existing industry measures**	The rule focuses on the prevention of WMSDs by the elimination or reduction of

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	"We believe our industry's approach to this situation is appropriate and adequate, and the burden should be on the Department to show otherwise. The Department should carefully and completely review existing measures within the industry before enacting new policies and rules which may be duplicative and/or counterproductive."	well-established risk factors. Many industries, and many employers within particular industries, may be using effective approaches to identify and eliminate such risk factors and will find themselves in compliance with the rule. The rule will not require that previously assessed jobs be "reassessed" if the employer's previous efforts are as effective as those required by the rule. While many employers have appropriate and adequate programs, L&I's survey of 5000 employers demonstrates that many do not. See the CES narrative for a more detailed discussion.
4.00	**Scientific evidence**	
4.01	**Causes of WMSDs (Science)** "Back injuries were considered cumulative trauma in the study…however in the WC system they are classified as a traumatic event…it isn't both.	In reality, back injuries allowed as "injury" claims under workers' compensation are generally the result of cumulative trauma that has shown itself following a specific event but that in fact developed over time. Acute traumatic events include slips, trips, falls, being struck by or caught in, and motor vehicle crashes. Musculoskeletal disorders associated with these acute traumatic events were excluded from the analysis of non-traumatic soft tissue WMSDs. There is a substantial body of scientific literature on the cumulative exposure to heavy physical work or overexertion in lifting, pushing, pulling, carrying, or throwing and resulting low back or shoulder disorders, for example (NIOSH, 1997, NRC 1999). In the workers' compensation system, such conditions are identified as "injuries" or as "illnesses" depending on whether there was an identifiable trigger event – that does not indicate that they were not in fact the result of a history of cumulative exposures. It is the intent of this rule to substantially reduce the number of WMSDs due to exposure to these manual handling risk factors, irrespective of whether they are categorized as "injury" or "illness."
4.01	"Close to half, or in some instances, a majority of employers who have undertaken efforts to reduce MSDs reported that they did not observe positive changes related to their efforts, yet the department continues its quest to regulate. This results in a costly experiment on employers. … Individuals are well positioned to study what works in their workplace. However, anecdotal examples of existing programs do not support an imposition of a regulation across an entire economy."	The risk factors addressed by the rule are not based on anecdotal evidence, but on a wide body of science. There is also a substantial body of evidence that the tools and principles of ergonomics work effectively to reduce hazards and thereby prevent WMSDs. Anecdotal testimony at the public hearings, however, did tend to confirm the scientific conclusion that the application of ergonomics to the prevention of WMSDs works. L&I's survey of 5000 employers showed that more than 50% of employers taking prevention steps reported a decrease in the number and severity of injuries. Some employers took relatively less effective measures, such as use of personal protective equipment and would be less likely to achieve positive results. See the CES narrative for a more detailed discussion.
4.01	"Department inspectors don't seem to know exactly what causes ergonomics injuries or precisely how to prevent them. But you want to	One of the reasons to adopt the rule is to provide clear guidance about the type of exposures that cause injuries and to guide employers, employees, and L&I staff in

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	pass a rule that requires employers to do just that – prevent ergonomics injuries."	determining whether such risks exist at a worksite and require correction. The risk factors addressed by the rule are based on a wide body of evidence that demonstrates a clear relationship to WMSDs. Eliminating or reducing those risk factors will prevent a significant number of WMSDs. Employers who have complied with the hazard reduction requirements of the rule will not be expected to take any other steps to prevent WMSDs that may be caused by those risk factors.
4.01	"Federal OSHA in the "Summary and Explanation of the proposed (Federal) Standard" recognized that in a number of jobs, workplaces and physical work activities, it may not be possible to eliminate muscular-skeletal diseases (64 Fed.Reg. at 65830)."	The Ergonomics Rule does not address all risks; it therefore will not prevent all work-related musculoskeletal injuries, but it will prevent a large portion of them. L&I agrees that it may not be possible to eliminate WMSDs in all workplaces. However, reduction of the risk factors identified in the rule below hazardous levels will result in a substantial reduction in WMSDs in Washington workplaces. This is discussed in further detail in the CES narrative.
4.01	"The (L&I claims) data, which was used for developing this proposed rule, is flawed. … seldom are the true causes of an accident/claim revealed without extensive investigation."	As discussed in detail in the CES narrative, the rule is based on the best available data. Limitations of workers' compensation data include both under-reporting and some over-reporting, and errors in coding. In a review of a random sample of musculoskeletal claims, miscoding tended to underestimate the number of claims that were due to a more gradual, non-traumatic onset, especially for the upper extremity and back. There tended to be an underestimate of acute traumatic musculoskeletal disorders of the lower extremity (primarily knee and ankle).
4.01	"The department's approach seems to be "learn-as-you-go" as indicated in its reference to Demonstration Employers in WAC 296-62-05101. To quote the department's brown-covered Ergonomics Update #4, page 2: "The department will work with a group of Demonstration Employers to test and improve guidelines, best practices, and inspection policies and procedures as they are developed." Our company questions the enactment of this rule in advance of finalizing this demonstration or pilot project."	The rule will reduce WMSDs. It will not eliminate them. The hazard zone indicates the levels where the risks have been consistently elevated. Therefore, the rule will not prevent all musculoskeletal disorders among working populations, but it will prevent many of them. L&I disagrees that this is a "learn as you go" rule. There is adequate knowledge about which exposures are hazardous and available methods for reducing these hazards to issue this rule and expect employer compliance. However, for such an important and initially unfamiliar rule L&I believes it would be appropriate and helpful to allow ample time before enforcement begins for the department to work with business and labor to prepare carefully. The GAO (1998) reported the positive results of implementing ergonomics in a number of different private sector companies. There are numerous case studies demonstrating substantial reduction in WMSD incidence and severity. There are epidemiologic studies that compare workers in jobs that are similar to those in the "hazard zone" of the rule to those who are not in the hazard zone and shown at least

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		2-fold differences in the likelihood of having WMSDs. Thus if you reduced your exposures to those of the comparison groups, you would have a similar decrease in likelihood of WMSDs. See the CES narrative for a more detailed discussion.
4.01	**"**The statistics relied upon to suggest the urgency of such a rule are flawed."	L&I relied on the most complete data available for Washington state. This included examination of the State Fund and Self-Insured workers' compensation claims data as well as a survey in which almost 5,000 employers responded (75% response rate). With respect to workers' compensation, more complete data is available for State Fund claims (medical only as well as lost time claims are coded) than for Self-Insured claims (lost time claims are coded). Claims were classified based on ANSI z16.2 codes for Nature, Type, and Body Part. Full details of the classification and results are available from L&I's research program, SHARP, and are summarized on their website for 1990-1997 WMSD claims (http:/www/wa/gov/lni/sharp). Similarly, an earlier version (1987-1995) was published in the peer-reviewed American Journal of Public Health in 1998. It is interesting to note that the estimated claims rate based on the 1998 employer survey was quite similar to the rate identified in the 1999 SHARP report based on the State Fund database. The only other illness/injury data that covers Washington State is from BLS. This is a random sample survey of private sector employers. It reported more than 22,000 relevant injury/illnesses resulting in days away from work in 1997. In the SHARP May 1999 report, the average number of State Fund non-traumatic soft tissue WMSD claims (excluding falls, etc.) was 53,351, with average yearly cost of $340,000 per year and lost time claims was 19,066. If a worker had a back injury in 1991 and carpal tunnel syndrome in 1996, this was counted as 2 claims. If the worker had the same injury on multiple occasions, this was treated as one claim. If the worker had WMSDs in multiple body regions at the same time, it was considered one claim for the overall count of claims but there may be overlap based on specific diagnosis (carpal tunnel syndrome and rotator cuff syndrome). Self-Insured lost time WMSD claims averaged 11,162 per year. We don't know how many "medical only" claims there were for the Self-Insured, but if the proportion is similar to the State Fund, there would be more than 25,000 Self-Insured claims per year. Thus, the L&I estimate of 50,000 claims per year for non-traumatic soft tissue WMSDs is an underestimate of the true magnitude of the problem in Washington State. There are at least 5 studies in the peer-reviewed literature which document that workers' compensation data underestimates the number of workplace musculoskeletal illnesses and injuries. As indicated in the SHARP 1999 report, for example, there is an average of 2,486 carpal tunnel syndrome claims per year in the State Fund with direct costs

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		averaging $13,045 per case. There are around 19,300 gradual onset back injuries per year with an average cost of $5,422 per case. We are unaware of any more comprehensive data for Washington state than what was used in the analysis. No commenters have provided additional data on the magnitude of the problem. All studies and analyses relied upon for this rule are available for public scrutiny.
4.01	There is significant disagreement on what causes stress and strain injuries and how to prevent them.	The best available scientific evidence provides a compelling basis for the relationship between the risk factors addressed by the rule and WMSDs. There is also strong evidence that applying the tools and principles of ergonomics reduces hazards and prevents WMSDs. There is substantial and sufficient agreement on these points. There is a full discussion of these matters in the CES narrative. Numerous studies have been published, reporting strong associations between musculoskeletal disorders and physical work load factors. The number of studies reporting no association between musculoskeletal disorders and physical work load factors are few and their quality is often lower than of those with a positive association. These studies have been reviewed authoritatively by the National Institute for Occupational Safety and Health (Bernard 1997) and the National Academy of Sciences (NRC 1999) • The National Institute for Occupational Safety and Health has concluded that "A substantial body of credible epidemiologic research provides strong evidence of an association between musculoskeletal disorders and certain work-related physical factors when there are high levels of exposure and especially in combination with exposure to more than one physical factor (e.g., repetitive lifting of heavy objects in extreme or awkward postures)." (Bernard, 1997) • The National Academy of Sciences has concluded that "there is little to shake our confidence in the thrust of our conclusions, which draw on converging results from many disciplines, using many methods: There is a higher incidence of reported pain, injury, loss of work, and disability among individuals who are employed in occupations where there is a high level of exposure to physical loading than for those employed in occupations with lower levels of exposure." (NRC, 1999) • The National Academy of Sciences has concluded that "There is compelling evidence from numerous studies that as the amount of biomechanical stress is reduced, the prevalence of musculoskeletal disorders at the affected body region is likewise reduced." (NRC 1999) NAS goes on to say: "There are a variety of actions that can be taken in the workplace to eliminate or reduce the risk of musculoskeletal disorders. According to the commissioned paper by

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		Smith et al (1998): 'These include engineering redesigns, changes in work methods, administrative controls, employee training, organized exercise, work hardening, personal protective equipment, and medical management to reduced exposures.'" Temporal association means that the cause should precede the onset of the disorder. In the case of WMSDs we have firm evidence of temporal association in the form of prospective studies, showing that an originally healthy study population became symptomatic after being exposed to the physical loads under study. The consistency of associations means that several studies give similar results. This has been the case concerning WMSDs. Predictive performance means that there should be a change in the occurrence of the disease after a change in the level of exposure to a physical load factor. A reduction in WMSDs has been shown in several intervention studies. These studies are discussed in the CES narrative and documented in the rulemaking file.
4.01	Proposed rule does not make an effective case that WMSDs will be reduced or prevented with its implementation. • can't guarantee that one injury will be prevented • no scientific evidence that measures outlined will have desired effect • don't know how effective each requirement reduces injuries • unclear results that injuries will be reduced • no guaranteed results	The scientific evidence is strong and compelling that the elimination or reduction of the risk factors will reduce WMSDs. Testimony at the public hearings, often provided by opponents to the rule, provides additional evidence that ergonomic efforts work in reducing WMSDs. The department will evaluate the effectiveness of the rule in achieving its objectives as required under the Administrative Procedures Act. See the CES narrative for a more detailed discussion.
4.01	Proposed rule will have an undetermined impact on workplaces. The rules are open-ended and experimental • *a systematic approach for change in line with business production must be taken to realize the true benefit of ergonomics*	The impact on the workplace will be the reduction of MSDs in the workplace. The reduction of the risk factors described in the rule has been shown in numerous studies in a wide variety of industries to reduce MSDs. The rule is not open-ended or experimental. It is based on years of pilot programs, experiments, scientific studies and practical experience. See the CES narrative for a more detailed discussion.
4.01	There is nothing that describes acceptable levels of physical demands or workstation layout. There is also nothing that describes corrective measures that might make a workstation or position more ergonomically safe and how efficacious these solutions might be.	The standard was developed to be fair and flexible. It allows the employer to determine **how** best to reduce or eliminate his or her workers' exposure to WMSD risk factors in the unique environment of his or her company while providing criteria for what risk factors should be reduced and to what level. The rule does identify specific risk factors and indicates that an employer's elimination of such risk factors will reduce the risk of WMSDs in the particular workplace. Examples of control strategies are given in the CES narrative. These include

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		reducing repetition through task variety and job rotation, reducing high hand forces by changing the size or shape of objects held in the hand, and many others. Practical control strategies can be found in numerous ergonomics textbooks and guides. "Cumulative Trauma Disorders" by Vern Putz-Anderson, deals with upper extremity MSDs, a 1997 NIOSH publication "Elements of Ergonomics Programs," provides an overview of basic control strategies. "Fitting the Task to the Man," by Etienne Grandjean is a comprehensive book of control strategies. In addition, the implementation plan described in the rule commits the department to work with employer and employee groups in Demonstration Projects to identify additional control measures and "best practices" in a range of industries. See the CES narrative for a more detailed discussion.
4.02	**Manual Handling (Lifting)** Based on Waters et al. (1999, Spine), the LI values should be kept below 2. To achieve this goal, the weight limits should be reduced by approximately 15-20%.	We agree that we should keep the Lifting Index values below 2 based on Waters, et al (1999, Spine). Reductions of 20 percent would be a significant reduction in weight and might be less feasible for many employers. However, the final rule reduced the values 11%-15%, bringing the lifting index below 2 in each of the lifting zones.
4.02	Believes current std will not protect vast majority of female workers. Based on muscle strength (which can be easily measured and verified unlike compressive force or energy expenditure) few females would be able to lift loads in step 2 of the worksheet. Using Snook and Ciriello (1993) data, less than 10% of female workers will have sufficient strength to lift loads in the worksheet and 1 in 3 males may not be able to lift these loads.	Using these weights would result in lifting index values of approximately 1, which is what we're currently using for our caution zone. Lowering the hazard zone values to 1 or below would cover substantially more employers and require employers to take steps to reduce hazards even in cases where the risk of injury is very low.
4.02	Failings in the NIOSH lifting guidelines were identified in the Beverly Enterprises ergonomics case.	The rule does not require use of the NIOSH lifting guidelines. However, the department has concluded, based on widespread evidence, that the guidelines are valid and can appropriately be relied upon. This is discussed in more detail in the CES narrative and in supporting documents in the rulemaking file.
4.02	It is not feasible to limit the number of times an item of a particular weight could be lifted.	If the number of times a lift can be made cannot be restricted, the employer must seek to use other controls; in most settings, it will be feasible to achieve the hazard control levels in Appendix B (or those adopted by the employer under the flexible performance approach) using a combination of controls. In cases where it is truly not feasible, the rule requires only that the hazard be reduced to the extent feasible.
4.02	Liberty Mutual's lifting tables are based almost entirely on workers' psychophysical appraisal of the maximum acceptable weight of lift rather than studies aiming to determine the circumstances under which lifting	The department has eliminated reference to the Liberty Mutual tables in the final rule. A further discussion of material handling/lifting issues can be found in the CES narrative and in supporting documents in the rulemaking file.

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	cause physical harm.	
4.02	Where did the 75 lbs. Once per workday, 55 lbs. Once per day values come from? What impact does the elimination of these lifting activities have on preventing MMH injuries?	Lifting 75 pounds once per day and 55 pounds once per day are not eliminated by the rule. Lifting 75 pounds once a day or 55 pounds ten times a day do meet the criteria for caution zone jobs and therefore require employee education and job analysis. Employers must take further action only if the job analysis indicates that a hazard exists. The criteria used for classifying heavy, frequent or awkward lifting jobs as caution zone jobs or Appendix B hazards are based on the 1991 NIOSH lifting equation that recommends lifting tasks be designed with a lifting index of 1 or below to protect most workers. NIOSH states that lifting tasks with a LI>1.0 pose an increased risk for lifting related low back pain for some fraction of the workforce (Waters, 1993). Even with an ideal lift (1 lift per day, load within 10" of the low back, origin and destination of the lift at knuckle height, no torso twisting, and good handholds), for a lift of 75 lbs., the lifting index would equal 1.5. Therefore, some percentage of the workforce will be at risk of low back injury and should receive awareness training on the hazard and have a more in-depth analysis of the hazard. The explanation above holds true for lifting 55 lbs. Or more, more than 10 times per day. This results in a lifting index of 1.08, which is still above the 1.0 value recommended by NIOSH. Reducing the lifting index to 1 or below would result in protecting 99% of the male workforce and 75% of the female workforce.
4.02	NIOSH guidelines are "most limited" when applied to "highly variable jobs" such as "warehousing, shipping, and receiving activities where there are many different sized loads and varying weights that are lifted at varying frequencies"	The rule does not require use of the NIOSH lifting equation. Based on the widespread evidence, it has identified risks that require appropriate controls. Frequency and duration are included in the guidance in Appendix B for employers who choose the specific performance option. Although using the NIOSH lifting equation to analyze high frequency, variable lifting tasks increases the complexity of the analysis, it is still possible to use the composite lifting index. This is done by computing the frequency-independent lifting index for each lifting task. Appendix B's heavy, frequent or awkward lifting task analysis in the final rule is based on the NIOSH lifting equation. Although it does not include information of how to calculate the composite lifting index, information is provided on how to calculate the weight limit for frequent, variable tasks by analyzing the two worst case lifts and the most commonly performed lift. The lifting requirements in the rule and the scientific basis for them are discussed more extensively in the CES narrative and elsewhere in the rulemaking file.

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4.02	Recommends in step 2 replace "at the beginning of the lift" to "when the object is initially grasped" to avoid any confusion with lift vs. lower issue. 70) Feels it's extremely important to evaluate the hand location at the destination of the lift not just at the origination of the lift. 70) Since the current figure is based on physical landmarks, compliance will depend on individual stature. Suggests incorporating height values (based on Marras and Kim, 1993) into figure as such: - Shoulder height 56" - Waist level 42.5" - Knee level 19" 70) Should also move waist line in figure up to umbilicus level 70) Feels unadjusted wt. Limits, especially those above shd. Level are too high based on SSPP and places females at undue risk. (e.g., According to SSPP only 40% of the 50th percentile females would have adequate shd. Strength to perform occasional lift of 70 lbs. At 7.5" in front of the ankles. 70) The wording on the 1 lift every 5 minutes is unclear for lifts at lower frequencies (e.g., 1 lift every 2 minutes) -Since the amount of employee twisting when lifting is often based on human behavior I would suggest making this move objective. Perhaps adding a question, "Does the work layout or do the work practices result in objects being laterally transferred a distance less than 36". It's these short lateral transfer distances that tend to result in little foot movement and substantial twisting. Another option is using a simple graphic depicting lateral transfer (see original comments for graphic)	We agree that step 2 could be a source of confusion and have changed the wording to avoid confusion of lifting vs. lowering. We agree that our simplified method does not fully address hand location at the destination of the lift, however, addressing this would require additional explanation, and could result in considerable misclassification. If significant control is required, a second analysis is required (with explanation) and then further explanation about which of the two weight limits should be used. This complicates the analysis significantly; for instance, the lift may be in compliance at the origin but not at the destination and visa versa. We think for practical purposes it's important to keep the lifting analysis in Appendix B as simple as possible to increase employer comprehension We initially considered using absolute values, however, this creates complications when knee level on the figure shows 19", but a very tall employee's knee might be at 23". To allow for differences in stature and avoid this confusion, we felt it was best to avoid absolute values. We do agree that waistline is too low and have moved it up to the umbilicus level. We agree that some percentage of the female population will not be able to safely lift in some of the above shoulder zones. However, to reduce these values to levels that a large percentage of females have the capability (according to SSPP) would require lowering the values significantly (40% - 70%). This would constitute a significant change to the rule and would create significantly greater obligations for employers. Instead we reduced the values in most instances to a level 11%-15% which keeps the lifting index below 2 in each of the lifting zones. In relation to the "perfect lift," we have compromised based on practical considerations and left the limit at 90 pounds, which generates a lifting index slightly greater than 2. We have changed "1 lift every 5 minutes" to "1 lift every 2-5 mins." We decided not to add this question about work layout to Appendix B because WAC 296-62-05130(2) already requires consideration of work layout.
4.02	The proposed manual material handling models do not agree. The NIOSH lifting model allows 50 lbs. As a maximum safe weight while the Snook tables allow considerably more. Which is right?	We agree there are discrepancies between the Snook psychophysical data and the NIOSH lifting equation and have decided to remove the Snook reference.
4.02	The results of Lavender, et al (1999) show that the outcome of an ergonomic job evaluation for LBD risk depends on the method used for that evaluation	Even though the Appendix B-Heavy, frequent or awkward lifting task analysis is based on the NIOSH lifting equation, the recommended weight limits are higher than what NIOSH would consider a low risk task. In the Lavender et al study

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		(1999), when comparing the NIOSH lifting equation to the other methods, a lifting index of 1 or below was categorized as low risk. Therefore, it is difficult to compare the proposed weight limits in Appendix B to the results of Lavender et al, since Appendix B values are based on lifting indexes that generally fall between 1.4 and 2.0. Based on the weight of the evidence, the department has concluded that these limits are most appropriate for those employers that choose the specific performance option.
4.02	The rule is weak in addressing lifting of awkward objects (e.g., uneven loads, human bodies, etc.)	The lifting hazard assessment in Appendix B can be used to assess lifting of uneven loads and humans, animals, etc. The assessor needs to know only the vertical location and destination of the lift, the frequency and duration, whether any upper body twisting occurs, and the location of the hands when the object is lifted or lowered. All of these measurements can be made whether an employee is lifting an uneven load, human, or animal. There are alternative measurement methods that can be used as well.
4.02	The weight values of 75 lbs. Once per workday and 55 lbs. 10 times per workday exceed the widely accepted values of NIOSH and should be lowered.	We used the 1991 NIOSH lifting equation as a basis for our values; however, we felt that reducing the weights to the level of a lifting index of 1 would be too restrictive. Based on NIOSH field research and WISHA field experience, many employers might not be capable of complying with the standard if asked to modify all manual material handling jobs to the more protective level of 1 or below.
4.02	We should use what's already available which is the NIOSH lifting standard. Even though the NIOSH lifting standard is more complex, I think it hits more of the high points than this particular formula does. There's some things that this formula's missing that I think should be in there	L&I used the 1991 NIOSH lifting equation as a basis for our values, however the NIOSH values were too restrictive, suggesting that many employers would not be capable of complying if asked to modify all manual material handling jobs to the level of 1 or below. L&I was also concerned about the complexity of the tool and the need to keep the WISHA requirements as simple and clear as possible. To simplify the lifting equation, the rule does not include the assessment of handholds. This is the only factor the 1991 NIOSH lifting equation includes that the rule does not.
4.03	- The twisting correction should be .85 instead of 10 lbs. - A 10 lb. Discount is substantial and am not convinced there is sound evidence to support this based on Duncan and Ahmed (1991) and McGill (1991a, 1991b)	We agree the twisting correction of 10 lbs. is oversimplified and probably an overestimate. Therefore, we have changed the twisting correction to .85 based on the NIOSH lifting equation's deduction for 45 degrees of torso twist.
4.03	**Twisting** The criteria fails to address what happens when a 10 lbs. Object is lifting 20 inches from mid body and the person has to twist.	Although twisting is not addressed in the Caution Zone in order to maintain clarity and simplicity, the lifting assessment in Appendix B accounts for not only the horizontal distance of the object lifted in front of the body (step 2) but also torso twisting (step 4). In step 2, to determine the unadjusted weight limit, the location of hands in front of the body is determined at the beginning of the lift. The farther away from the body the object is lifted, the lower the unadjusted weight. In step 4 if the employee twists more than 45 degrees while lifting, 10 lbs. is deducted from

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		the unadjusted weight limit.
4.04	**Vibration** Do whole body vibration, pushing and pulling and other risk factors not considered in this rule? Are the vibration from the truck, pushing and pulling, and many other risk factors going to be excluded from the rule?	Whole body vibration, and the risk of pushing and pulling are risk factors that can lead to work-related musculoskeletal disorders and represent recognized hazards in some work sites. However, they are not addressed by this rule because the measurement of whole body vibration can require sophisticated measurement equipment and technical skills, and measurement of pulling and pushing is largely impractical in many contexts. In order to avoid complex measurements for employers determining whether the rule applies to them, these risk factors were omitted from the rule.
4.05	**Contact stress** "…discrepancy between the number of repeated impacts to trigger a future job evaluation; is the number of impacts 10 per minute (Appendix B WAC 296-62-05174) for a total of 120 impacts per day) or 10 per hour for two hours (Part 1, WAC 296-62-05105 for a total of 20 impacts per day)."	There is no discrepancy; the two requirements work together to identify the "caution" and "hazard" levels. WAC 296-62-05105 defines the "caution zone." Employers with jobs involving more than 10 impacts per hour more than two hours per day are covered by the standard and must provide ergonomics awareness education and complete further analysis to determine if a hazard exists. If those employers rely upon the specific performance option to complete that analysis, then the guidance in Appendix B indicates that there is a hazard that must be corrected if there are more than one impact per minute for more than two hours per day.
4.07	**Intensive Keying** COT is very concerned that keying is included as a "caution zone job" in the standard. MSDs for office workers … could actually be over reported given the number of individuals engaged in non work-related computing activities. … the incidence rate for keying has dropped significantly for the last several years."	The rule focuses on several risk factors that are well established in the scientific literature, one of which is "*intensive* keying." Much office work does not fall into this category. The rationale behind the risk factors is addressed in detail in the CES narrative and in response to other comments.
4.07	**Why is keying considered as a caution zone job, as both BLS and Washington State Claims Rates are low for keying jobs?**	A number of studies have shown an association between neck and upper extremity disorders and long-lasting *intensive* keying. The BLS and claims data, however, do not distinguish intensive from non-intensive keying jobs. They also do not distinguish keying jobs with awkward postures from those done with acceptable postures. The rule requires that the hazard be addressed, and the hazard is not presumed to be present in all keying activities. All keying jobs are not in the caution zone.
4.07	The number of key strokes may not be the causes for musculoskeletal disorders among computer users, rather than the static postures. Why does the Department use 'intensive keyboarding' as a risk determination?	It is true that one of the major risk factors among computer users is the static loading on their neck-shoulder areas. The cause of the high static loading is usually improper workstation setting and continuous use of keyboarding/mousing. Workstation settings which otherwise may be considered properly adjusted, may still cause high static loading on the operator's neck-shoulder region if the operator

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		has to assume one single posture and perform continuous hand-intensive work (in the case of intensive keyboard work). This is why prolonged intensive keyboarding is considered as one of the risk factors that prompts further assessment.
4.07	What data confirms in the telecommunication industry that "intensive keyboarding" is the primary determinant of "risk factor" in a keyboarding environment?"	We are aware of no studies that report intensive keyboarding as "the primary determinant " and the rule does not presume that it is. The study by Hales et al (1994) identifies a number of risk factors for upper extremity disorders in the telecommunications industry. In the 1998 SHARP employer survey, in SIC 48, 50% of establishments reported exposure to awkward lifting 31% fixed postures, 58% doing intensive keying or mouse work and 46% using non-powered tools.
4.08	**Awkward postures** Anyone who drives a vehicle could be in these 'awkward postures' for more than two hours per day Working with the neck, back or wrist bent more than 30° for more than two hours total per day. This would affect the brick mason because of constant wrist motions at all different heights while spreading mortar. Also the neck and back are bent while laying the units in the wall. Foundation work requires the mason to lay units at ankle or knee height	It is unlikely that anyone who drives a vehicle will find themselves covered by the "awkward postures" portions of the rule. 'Awkward postures' refer to those positions that employees must adopt in order to perform their jobs and from which there is no opportunity to change. They are specifically described in the rule. A driver is not likely to operate the vehicle with hands above the head or the elbow above the shoulder for more than two hours. In relation to bending the neck or back more than 30 degrees (also unlikely for driving), the standard has been clarified. The duration refers to the total amount of time per day employees are in these positions without support and *without the ability to vary posture*. Drivers of vehicles are able to adopt a variety of postures when they are driving, many of which are not held for more than two hour per workday. The final rule no longer includes working with wrists bent more than 30° in the caution zone. Many approaches to ergonomics used in different industries can also be expected to work in the masonry industry. General strategies of work height adjustment, pre-building components in comfortable orientations, attention to work methods, organizing work to reduce material handling, rotation between different tasks, and selection of better-designed tools can be accomplished with little or no additional cost. Work in masonry has shown successful interventions such as the use of adjustable work platforms to awkward back postures and work practices to reduce lifted weight. The department is launching a joint effort with industry labor and management to identify additional controls and other "best practices."
4.09	**Temperature** Why is cold not included as a risk factor?	There is evidence from both epidemiological and experimental studies that cold is a risk factor for some MSDs. However, there is not enough data out to suggest reference values for temperature. Also, the few epidemiological evidence comes from studies in which the workers had many additional physical load factors, and no study has shown cold alone to be a risk factor for musculoskeletal disorders covered by this rule. For these reasons, cold was not selected as a risk factor for the purposes of this rulemaking.

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4.10	**Controls** There is significant disagreement on what causes stress and strain injuries or how to prevent them. Ergonomic regulations are unproven and have not been scientifically shown to reduce or eliminate WMSDs.	Although specific prevention strategies may vary between companies there is no meaningful disagreement on the basic principle of preventing WMSDs. The prevention and reduction of WMSDs lies in the reduction or elimination of exposure to risk factors in the workplace that cause or aggravate MSDs. There is a large body of scientific literature that provides convincing evidence of the positive effects of reducing exposure to those risk factors described in this standard. The 1997 NIOSH publications "Elements of Ergonomics Programs" provides an extensive list of studies demonstrating the effectiveness of controlling exposure to risk factors to reduce MSD injuries and discomfort. See the CES narrative for a more detailed discussion.
4.10	"Part "d" indicates the need to reduce all WMSD hazards below the criteria chosen in WAC 296-62-05130(1) or to the degree feasible. This makes the threshold risk levels defined by the evaluation approaches defined in that section the "defacto" specification that has to be met. As indicated earlier, there is no scientific basis in the research literature that the levels defined by any of these six approaches are hazardous, or that exceeding these levels will produce injury, or that being below these levels will be protective from injury. It is inappropriate to use these as the basis for establishing thresholds of risk. All of the above comments regarding the General Performance Approach also apply to the Specific Performance Approach. In particular, there is no scientific research evidence to support the criteria for defining ergonomic hazards presented in Appendix B of the proposed Ergonomics Rule. No supporting evidence is provided in the Ergonomics Rule or the Supplement to justify the use of the proposed criteria in Appendix B."	The basis for each of the criteria – which are indeed specification requirements ("de jure" as well as "de facto") for employers choosing the specific performance option – in Appendix B is described in detail in the CES Narrative.
4.10	"At this time, the equipment and/or tools are not commercial available to reduce exposure to many of the "caution zone jobs"."	The rule does not require that exposure to caution zone jobs be reduced. It does require that hazardous exposures be reduced, and in most such cases the control methods are available, although they may need to be adapted to particular environments. That is one of the reasons the rule provides the extended phase-in period. Where feasible controls are truly not available to fully mitigate the hazard, the employer needs to reduce the hazard only to the degree feasible. See the CES narrative for a more detailed discussion of feasibility.
4.11	**Engineering controls** Scientifically proven feasible engineering controls are not available for non-fixed worksites. This rule will require me to either go out of business or hire more workers.	Many of the engineering controls that work at fixed worksites also have application in non-fixed worksites. Working heights may be raised or lowered by use of temporary stands or bulk material. Improved tools or accessories to reduce poor body postures and vibration are available. Although transient worksites may create special challenges for implementing such controls, the effectiveness of the controls

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		does not depend upon them being used at fixed worksites. The rule does not require the implementation of engineering controls where they are truly not available and feasible. No employer will be required to replace full-time workers with part-time workers if economically and technologically feasible solutions are not available for hazard jobs. The employer and workers in a particular industry may know the most about what types of tools and methods may or may not work in specific applications. General ideas and previously applied interventions may be applied either from that industry or adapted from another industry. Where interventions have not been previously developed, the knowledge of that business can often be applied to reduce specific injury risk factors as detailed in the rule.
4.12	**Administrative controls** Scientifically proven and feasible administrative controls are not available for non-fixed worksites and jobs.	Job rotation has been shown to reduce the physical workload if used in a systematic way (Kuijer et al., 1999). Rotating between jobs or tasks that use different muscle groups may be accomplished in a way that does not reduce productivity and reduces the physical stress on the highest risk body areas. Job or task rotation means alternating between different tasks that have different exposures such as nailing a wall versus nailing a floor, not necessarily completely changing type of work or trade. Additionally, job methods modification may be a viable intervention. Methods training along with continued feedback can produce changes in worker behavior and reduce the presence of risk factors. Training can be supplied in either written and/or oral form at little additional per-employee cost. New employees can either demonstrate previous training knowledge or receive training materials from the new employer if engaged in a caution or hazard zone job. Those employees not in either type of job are not required to be given ergonomics training. Simply training workers to do things such as lifting smoothly without jerking, twisting or making quick movements can significantly reduce injury risk factors.
4.13	**PPE** Scientifically proven and feasible PPE controls are not available for non-fixed worksites and jobs.	The PPE controls available to non-fixed worksites are not different from those used at fixed worksites. Anti-vibration material contained in tool grips or gloves which conform to ISO standards may reduce hand-arm vibration, particularly in the higher frequencies.
4.14	**Ergonomics Program** no clear guidelines for implementing an ergonomics program	The rule does not require an ergonomics program – it requires the identification and elimination of hazards, as well as awareness education for employees in

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		caution zone jobs. The rule itself is consistent with the documented elements of successful ergonomics programs: management commitment, employee involvement, the identification of workplace conditions that may cause WMSDs, the development of controls and solutions and the training and education for employees. These elements have been identified through literature reviews, interview with experts in business and labor and experts in the academic community and by performing case studies. A study of private sector ergonomics programs by the US General Accounting Office in 1997 and the 1997 NIOSH publication, "Elements of Ergonomics Programs" identify these elements as essential to reducing MSDs in the workplace
4.15	**Bad controls** A major Washington grocery chain was required by L&I inspectors to revamp and remodel its check stands to prevent carpal tunnel injuries to checkers. The chain spent millions of dollars to comply with the citation. And what was the result? As we understood it, nothing, no discernible effect.	In response to these comments, L&I asked on at least two separate occasions during the public hearings for a copy of the study on which the comments rely. In both cases, the study was promised on the record. No such study was ever provided. L&I has not required any particular checkstand design, nor has it prohibited any particular checkstand design. There have been a few citations issued to major grocery chains in the state for ergonomics issues related to checkstand design; however, these citations did not require any stores to revamp or remodel existing checkstands (redesign of checkstands was only one option among many suggested as possible means of compliance, none of which were required). In one particular citation and ensuing settlement agreement, the grocery chain agreed to make a good faith effort to replace checker unload with customer unload checkstands at five existing stores when remodeled or relocated. In the only other citation and settlement with a large grocery store chain in the state, the employer agreed to remove a particular type of checkstand on or before the next store remodel date in four stores (but only if other technological advances or bona fide considerations did not arise).
4.15	For years L&I inspectors recommending using backbelts to prevent back injuries, but in 1994 L&I admitted there was little scientific evidence to support the use of back belts to prevent injuries.	L&I agrees that there is little evidence that back belts prevent injuries and is unaware of inspectors recommending their use – it was never the department's position to do so. The first official position L&I took on the use of backbelts was in 1994 when the department issued the backbelt fact sheet stating that studies show wearing a back belt does not reduce injury rates or the number of lost work days and little scientific evidence exists to support back belts as preventing injury. We currently have the same position on the use of back belts. However, even if L&I had changed its position in 1994, this would not be an argument that the rule or the rulemaking was flawed.

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4.15	Employers blindly spend large amounts of money changing their employees' workstations, only to see negligible or no reductions in ergonomics-related injuries.	It might be true that if the employers spend large amounts of money blindly without considering the real problems of the workplaces and the possible production changes that may also counteract the effect of ergonomic improvements, the expected reduction in musculoskeletal disorders may not be seen. There are numerous studies that show the reduction of risk factors through engineering and/or administrative controls, and also in many cases the reduction of musculoskeletal disorders. The department will work with industries to develop best practices so to provide some examples for ergonomic interventions.
4.16	**"Best Practices"** There is not evidence to justify that "best industry practices" is the "best practice"	The rule does not identify specific best practices but commits to working with employers and employees in identifying such measures. The rule does identify risk factors that should be reduced or eliminated based on a wide body of scientific evidence. The justification for "best practices" will be that they are a means to reduce exposures below hazardous levels or to the degree feasible. However, "best practices" would not be the only practices that an employer could use to come into compliance. It is even possible that there would be control methods arguably "better" than "best practices." The term "best practices" was chosen for its convenience and widespread use rather than its precision. L&I considered using the terms "good practices" or "acceptable practices" to make it clear that all employers would not be expected to meet the highest levels of quality in their industry. However, the final rule states explicitly that employers may choose to use "best practices" wherever these have been developed but will not be required to do so.
4.17	**Checklists** " While many agricultural employers are large corporate enterprises, some are small businesses where neither the grower nor the foremen have much expertise in industrial hygiene. To facilitate compliance with the Rule, by all covered employers including small enterprises, it would be helpful for the Department to publish: 1) a checklist to assist employers in determining whether they are covered by the Rule;	During the phase-in period, L&I will be working with employer and employee groups to develop, among other things, compliance guides to assist both large and small employers in applying this rule in their workplaces. The suggestion of a checklist to supplement the relatively simple guidance in the rule for determining coverage by the rule is a good one, and this idea will be brought up during these meetings as a potential product for the group to develop.
4.17	Checklists should be simple enough to allow people without ergonomics expertise to evaluate jobs for WMSD hazard.	L&I agrees. The rule is designed to be as simple as possible (and, in some cases, risk factors were not addressed or other compromises were made in order to maintain this simplicity). Identification of the caution zone tasks does not require ergonomics expertise, and many employers also will be able to rely on the guidance in Appendix B to evaluate jobs for WMSD hazards without relying on specialized staff.
4.18	**Tools** " there is no certification that I know of for "ergonomically correct" tools.	There is no certification for "ergonomically correct tools" and the rule does not require one. Employers and employees merely have to identify any tools that, by

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	This seems to be a label that manufacturers/vendors can put on any tool they produce with little or no scientific studies." "Currently, there is no recognized standard or certification procedure to be referenced in determining an agreed-upon list of "ergonomically correct" tools."	nature of their design and use, create a WMSD hazard for the user. They then need to replace these tools with ones that do not create a hazard, or redesign the job or process to eliminate or reduce the use of that tool to non-hazardous levels. Lists of tool vibration values are available, and L&I is working to expand these lists to cover more tools.
4.18	The implementation of the Rule will shut down all field activities as heavy weighted tools have to be used.	Heavy weighted equipment and objects are frequently handled in many jobs, such as those in the utility and transportation industries. Many lifting assist devices are available for many different purposes to reduce and help with manual lifting tasks. Also practical work practices (e.g. team lifting, moving instead of lifting) have been developed in the relevant industries. The department is working with industries to develop best practices and tool boxes so that successful methods can be shared within the industries. To the extent that controls truly are not feasible, the work will not need to shut down because it requires controls only to the extent they are feasible.
4.19	**Vibration** Vibrating tools are used on a reasonably continuous basis. It is not possible to remove the use of saws and sanders.	The rule does not require the elimination of saws and sanders. The duration of using vibrating tools is the time that the tool is actually activated. The actual duration that the tool is activated is usually much less than the time that the tool is held by the employee. Although the actual duration of a tool is activated may vary between the types of tools, the nature of the task and the way that a job is organized, some data provided by Atlas Copco Tools may help to illustrate that the actual duration of tool use is usually shorter that what people may think (grinders: 3 hours, drills: 1 hour, and screwdrivers: 2 hours). The limit values for hand-arm vibration hazard is not only determined by the duration of the tool use but also the vibration values. Many tools such as saws and sanders may not have very high vibration values (less than 2.5 meter per second squared (m/s^2); thus the 8-hour energy-equivalent frequency-weighted acceleration values as determined by using the chart of WAC 296-63-05174 Appendix B may not exceed the limit values. Selection of power hand-held tools with lower vibration values is usually preferred when the tool is to be used on a continuous basis, and employers can use the long implementation period to replace tools with lower vibration tools as part of their normal replacement process. However, this is not the only solution to solve hand-arm vibration problem. For instance, re-designing a job so that the operator prepares his own work objects rather than just performing the sanding or sawing tasks will reduce the exposure duration of actually using the vibrating tools, thus reducing the vibration hazard.

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		Certain tools such as jack hammers may have very high vibration values. Thus the duration of using these tools should be much shorter. Rotation of employees has been one of the practices used in the construction industry.
4.19	The proposed hand-arm vibration limit value of 2.5 m/s^2 is not practical, and will put lots workers out of job.	This is a misinterpretation of the rule. The rule does not prohibit the use of power tools with declared vibration values of greater than 2.5 m/s^2. The actual measure used in the rule is the 8-hour energy-equivalent frequency weighted acceleration value of 2.5 m/s^2. This measure is related to both the declared vibration level of a tool and the duration that the tool is activated. For a tool with a declared vibration value of 2.5 m/s^2 being used continuously (non-stop) for 8 hours, the 8-hour energy-equivalent frequency weighted acceleration value is 2.5 m/s^2. Most grinders in the market have declared vibration values lower than 2.5 m/s^2. Only a few have higher values (up to 5.5 m/s^2). Even when using tools with a declared vibration value of 5.5 m/s^2, the 8-hour energy-equivalent frequency-weighted acceleration value could still be controlled under the allowed 2.5 m/s^2 level as long as the operator does not hold the activated tools for longer than 1.65 hours per workday. According to tool manufacturing industry's statistics, the total average duration of grinder use is 3 hours with a variation of +/- 1.5 hours). The currently vibration limit will not affect most jobs where power tools are used. With higher-vibration tools, the duration of use should certainly be lower. If it is truly not feasible to control these hazards in a given workplace, the rule clearly states employers must only reduce the hazard to the extent feasible.
4.20	**L&I's experience as an employer** L&I's experience factor is higher than most other companies and they have had an ergonomic program in place for several years. Doesn't this demonstrate that ergonomic guidelines are ineffective or results can not be guaranteed.	L&I has been using ergonomics for a number of years to identify and reduce hazards; however the specific design of L&I's previous efforts would not meet all the requirements of the rule. Nevertheless, L&I has made progress in preventing WMSDs and expects to achieve greater success by complying with the new rule. Although L&I's experience factor is higher than average, its WMSD rate is lower than average. This is because the experience factor compares employers within industries, and L&I is in a relatively low risk industry (state government). In any case, L&I is included in the first group of employers covered by this rule.
4.20	"I have been told that the Department of Labor and Industries implemented ergonomic guidelines several years ago. When I inquired about their experience rating, I was informed that it is over 1.3. These are the same people who are trying to tell my employer (a CONTRACTOR, with an experience rating of .852) that their safety programs do not go far enough in reducing L&I claims."	The rule is based on well-established risk factors the elimination of which will prevent WMSDs. Much of L&I's activities as an employer are relatively "low risk," as is true of other state government employers that use the same risk classes. The fact that a construction contractor has an experience factor of .852 and is therefore safer than most construction contractors does not suggest that it is also safer than a state government employer with an experience factor of 1.3. Construction is a high hazard industry (with a high rate of WMSD claims) and the base premiums for construction risk classes reflect that reality before any

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		experience factor has been applied. An employee working for the contractor with a .852 experience factor is, on average, statistically more likely to suffer a WMSD claim than an employee working for L&I.
4.25	**Solid waste** Standards and interventions that work in other industries do not apply to the solid waste disposal/recycling industry.	Evaluation of ergonomic risk factors has been performed many times in this industry by consultants, researchers and regulators. Risk factor levels are no more difficult to identify in the solid waste disposal industry than in other non-fixed worksites such as construction or agriculture. Many interventions such as new waste containers, work techniques and job rotation strategies have been used previously which may be applied along with future low-cost innovations developed by the industry (Kuijer et al., 1999). Weight limits on containers and improved customer education may also aid in the reduction of handled weights. In the State of Washington, several municipalities have adopted newer lifting equipment on their vehicles. The City of Spokane now uses automated lifting devices on most of their routes and has seen a decrease in injuries corresponding to implementation of mechanized lifting. The City of Olympia has also started using semi-automated lifting devices on their refuse collection vehicles.
4.26	**Construction** The changing construction environment is much different from other types of fixed-work and makes assessment and control impossible.	Although non-fixed work sites represent unique challenges, assessment and control of job hazards in these work sites is not impossible. Multiple assessments have been performed using widely accepted methods to identify and quantify risk factor levels in the construction industry (CPWR, 1993; Spielholz et al., 1998, Buchholz et al., 1996). The same control strategies employed in other industries may be applied to construction. These strategies include improved work methods and training, and attention to the match between the worker and the task with respect to working height and tools used. Simply planning jobs with physical stress in mind can reduce awkward body postures and manual material handling. An acceptable alternative hazard assessment method would be to use the University of Michigan report by John Everett entitled *Ergonomic Analysis of Construction Tasks for Risk Factors for Overexertion Injuries* (NIOSH Grant #5 R03 OH03154-02) to analyze ergonomic risk factors in the different building trades. All risk factors above level 2 would require attention and control unless it can be proved that reduction is economically or technically infeasible. Another resource for a summary of assessment strategies, possible risk factors and previously demonstrated controls is the Ergonomics in the Construction Industry chapter of the book by Karwowski and Marras (1999). Assessment tools used in

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		the construction environment are discussed in this chapter. Interventions are presented by class, including ideas involving new materials and new tools as well as work practices, which involve principles that can be applied to a wide variety of trades and situations.
4.26	There are no proven feasible ergonomic interventions or resources available for the construction industry and specialty trades.	Many approaches to ergonomics used in different industries also will work in construction. There has been a significant amount of research in the area, which has identified possible interventions and "best practices" recommendations. (Ergonomics for Carpenters: UBC Health and Safety Fund, 1995, ; An Ergonomics Idea Book: National Safety Council, 1988; Ergonomics and Construction: Center to Protect Workers' Rights (CPWR), 1993). General strategies of work height adjustment, pre-building components using comfortable orientations, attention to work methods, organizing work to reduce material handling, rotation between different tasks, and selection of better-designed tools can be accomplished with little or no additional cost. Many tools have been developed for use in construction that can decrease the physical load from specific tasks. Some examples of these in relation to roofing, drywalling and carpet laying include but are not limited to: drill stands/extensions, plasterboard lifts, materials handling equipment and powered carpet stretchers. Interventions that have proven to decrease risk factors in electrical work include the use of battery-powered screwdrivers and bent-handled pliers (CPWR, 1993). Work in masonry has shown successful interventions such as the use of adjustable-height work platforms to reduce awkward back postures and work practices to reduce lifted weight (Holmstrom, 1987; Hammarskjold, 1987). Many other examples exist for these and other trades in construction.
4.27	**Sheet Metal** There are no proven ergonomic interventions or resources available for the sheet metal industry.	Many of the principles of good job design also apply to the sheet metal industry. Improvements in materials handling practices, standing-work, and seated-work can be adapted from those developed in other industries. Additionally, significant consultation and research work has in fact been conducted in the sheet metal industry (SHARP; Humantech Inc.).
4.28	**Carpet Installation** There are no proven ergonomic interventions or resources available for the carpet installation industry.	There are many improved tool designs and methods available to assist in carpet and floor installation. Powered carpet stretchers, cutters and stripping machines are available which remove the majority of knee kicking and hammering with the hand (Amazon.com-Crain Cutter, Wolff Flooring Tools). For employers who choose the specific performance option outlined by Appendix B, one person is allowed to lift a maximum of 80 lbs. Up to 12 times a day if done at an appropriate height with no twisting. Given this, it is estimated that two people can lift a 160 pound roll of carpet enough times to do two or more houses per day. Heavier weights would need either additional people or mechanical-assist devices.

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		Reaching a maximum number of acceptable lifts for a given weight does not mean that a worker cannot work anymore that day. This means that alternative methods of reducing the exposure should be investigated for these lifts. Solutions and recommendation for use of power stretchers are contained in DHHS Publication 90-104, NIOSH Alert regarding carpet laying. Also refer to Village et al. (1998) for comparison of stress between different stretchers and specifications for a carpet laying device.
4.29	**Plumbing & Pipefitting** There are no proven ergonomic interventions or resources available for the plumbing and pipefitting industry.	This trade comes under the given construction industry comment responses. However, specific ergonomics assessment and control work has been performed in the plumbing and pipefitting industry. Oregon Health Sciences University in Portland has done work with plumbers and pipefitters in the field addressing ergonomics issues. Additionally, many interventions which have application in the construction industry in general or fixed industry will also have application in these jobs.
4.30	**Agriculture** There are no proven ergonomic interventions or resources available for agriculture.	Assessment and intervention strategies which work in other types of non-fixed or seasonal workplaces also can be applied in agricultural environments. L&I has specifically looked at jobs in the tree nursery and apple orchard industries (SHARP, 1999; L&I email memo, 2000). Groups at the University of California and University of Wisconsin have also done extensive work testing assessment and intervention strategies with success in agriculture. Some jobs do present challenges; however, there are low-cost solutions that can reduce risk factor levels in many situations. L&I believes that agricultural work presents a significant risk of musculoskeletal injury to workers. Interventions designed to comply with the rule will address significant risk factors but not all risks. Joint work between agricultural workers and farm owners/managers may be the best way to arrive at effective strategies for intervention that either meet or exceed the requirements of this rule.
4.31	**Beer/Beverage Delivery** There are no proven ergonomic interventions or resources available for the beer/beverage delivery industry.	Beer kegs weigh over 100 pounds and represent a lifting hazard if done with one person and no mechanical-assist. There are successful solutions developed and tested in the field for this industry. Low-cost material handling equipment is available from vendors (stairclimber.com, vestilmfg.com), which can control hazards when used in conjunction with work methods to eliminate the need to lift. Federal OSHA has evaluated these jobs as well and made recommendations to address risk factors (www.osha-slc.gov/SLTC/ergonomics/ergonomicreports_pub/wa981201.html).
4.32	**Stevedoring** There are no proven ergonomic interventions or resources available for	Assessment and intervention strategies that work in other types of non-fixed, seasonal or variable workplaces also can be applied in stevedoring. Workers

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	stevedoring.	receive portable training and each worksite is responsible for levels of ergonomic risk factors, so it will be possible to accommodate the variation of workers between job sites. A study by Riihimaki et al. (1994) found that machine operators, including stevedoring had a 22% incidence rate for back injury over 3 years. This level of injury development represents a large cost to the workers, industry, and to the compensation system. Many general ergonomic strategies available to all non-fixed worksites may be applied in this industry as well. Specific materials handling controls have been applied and continue to be developed which further control risk factors in this industry (www.pmh-co.com, www.bpt.on.ca).
4.33	**Delivery Jobs** Risk factors such as poor postures, repetitive procedures, and vibrations are intrinsic to the job requirements. It is not possible to control these factors. Also the physical demands for the job can change daily. Residential deliveries can have narrow doors and stairways to move heavy furniture.	Employers will be responsible under the rule only for controlling hazards that they can anticipate and that they can control or correct. The CES narrative includes more discussion on the issue of mobile employees, as does 11.02 below.
4.50	**Definition of MSDs/WMSDs** Definition of certain MSDs a problem. No clearly defined pathology behind these disorders. Pain symptoms likely represent normal physiologic responses to mechanical stress and should not be compensable work-related conditions.	The rule does not depend upon an understanding of the pathology underlying various musculoskeletal disorders. It is based upon a very strong body of scientific evidence proving that exposures to hazards cause injury and disability. Where the risk factors are controlled or eliminated, the risk of WMSDs will be decreased. The WMSDs addressed by this rule are serious ailments resulting in material impairment of health or functional capacity. The rule does not address the issue of whether they should be compensable. See the CES narrative for a more detailed discussion.
4.55	**Injuries unreported because of intimidation from employers.** "The amount of injuries, a lot of broken bones, et cetera, are not reported because of intimidation from the employers. They threaten them by saying, We'll fire you or you have to vacate the residence you're living in because that's my property."	Although L&I recognizes that under-reporting probably occurs, our analysis of the risk represented by WMSDs remains valid – and is based on the best available evidence.
4.60	**Changes in Rates** ….Why is it that soft tissue injuries such as back strain, shoulder strain, muscle strain in general are so predominate in today's workplace? Has the work changed so much? Why do more of them take place on Mondays?	Claims due to occupational accidents and injuries have in general decreased in the 1990s, but the incidence of non-traumatic soft tissue disorders in the upper extremity have remained constant. Traumatic injuries are more common on Mondays than on other days of the week, but we are not aware of any such data for the non-traumatic soft tissue disorders.
4.60	Rule is unnecessary since rates are already declining	L&I has reviewed the data carefully and disagrees. The decline is lower than that of other injury types, it is not consistent across all industries (some are in fact increasing), and the rate of decline has slowed in recent years.

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		See the CES narrative for a more detailed discussion.
4.60	"The Bureau of Labor Statistics reported in 1997 that the incidence of Cumulative Trauma Disorders has declined by 29 percent while reported tendinitis cases dropped by approximately 28 percent."	The injury and illness rates and recent trends are discussed in detail in the CES narrative.
4.70	**Individual Factors** "If scientists and medical experts cannot agree on the science regarding ergonomic factors, then regulators, employers, and employees cannot agree on implementation or correction of `ergonomic problems', when in fact, they could be trying to correct what is actually the result of an underlying medical condition. The rule is too vague, and even ergonomists cannot agree on its implementation."	The specific risk factors addressed by the rule are based on a wide body of scientific knowledge that demonstrates that such risk factors increase the risk of WMSDs. While other factors may also contribute, the rule focuses on the risk factors present in the workplace and subject to the employers control.
4.70	Employees should have adequate working shape to be able to perform those physical duties.	The rule is risk-factor based. The existence or absence of a risk is not directly related to the individual workers but to the tasks. Strength is not necessarily a protection against injury, and employees who are "able to perform" certain tasks are not necessarily able to perform them repeatedly without risk of injury and disability.
4.70	Why 1 worker gets WRMSD and another does not	There are two basic reasons why some individuals become injured or sick and others do not. First, if the exposures are different the outcomes will be different. Even two people working side by side doing very similar jobs may have very different exposures to physical risk factors. Second, there may be individual differences which render one person more likely to become ill or injured than another person with the same exposure. The most commonly studied individual factors for MSDs have been age, sex, overweight, smoking, previous traumatic injuries, and participation in physical exercise in general and certain sports activities in particular. Although some of these factors are not precisely defined, that is not unusual. Employees exposed to an equal level of asbestos will not necessarily all develop asbestosis, nor will employees falling from the same height all suffer the same injury. The rule has been designed to protect from certain workplace hazards that are known to cause or aggravate WMSDs. It will thereby prevent many WMSDs but it will not eliminate them. See the CES narrative for a more detailed discussion.

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4.70	Point 1: Carry-over effect of exposures from previous jobs. Point 2: How do we judge people based on their varying physical characteristics in a way that we can match the work to the person.	The rule is based on specific risk factors, not on any particular individual's ability to perform the job or individual likelihood of injury. However, in many cases proper job design will need to take into consideration the fact that people come in different shapes and sizes. For example, adjustable equipment or a choice of tools with different size handles may be appropriate.
4.70	What role do mental or emotional issues play in determining the effects of a particular work station or motion of a employee?	Work organizational factors (e.g. work pace, distribution of tasks, distribution of rest breaks) can directly affect the physical loads imposed on a worker at work, and psychological strain can add to the biomechanical strain due to physical loading. Work organizational factors and psychological strain together with individual psychological characteristics affect also the reporting of musculoskeletal disorders. In any case, whether such issues are present or not, the risk is increased when the risk factors addressed by the rule are present in the workplace, and reducing or eliminating these risk factors will reduce the risk of a WMSD. See the CES narrative for a more detailed discussion, including other non-work factors.
4.70	Worker's comp does not take into account non-work related factors	Workers' compensation decisions are based on a "more probable than not" relationship to work. That determination weighs in a number of non-work factors including hobbies, diseases, prior injuries, etc. These non-work factors are not included in the workers' compensation codes. On the other hand, when looking at a number of epidemiologic studies (NIOSH, 1997), gender, age, leisure activities, systemic diseases, etc. are usually taken into account in the analysis. In these studies that looked at both work demands factors and non-work factors, the work demands factors were still important predictors of WMSDs.
5	**Money back guarantee if controls don't work**	
5.01	**L&I should provide money-back guarantee** "You have said you are confident your proposed regulations will prevent injuries. If so, are you willing to repay my costs if they turn out to be ineffective? As a private business owner, I have to stand behind my "product." Will you do the same, and if not, why not?" "L&I should agree to reimburse employers for the cost of implementing rule-related ergonomics initiatives that fail to reduce injuries if the department is unwilling to conduct pilot programs to assure the effectiveness of its rules."	L&I is confident that employer compliance with the rule will reduce hazards that cause WMSDs and will actually result in a net benefit to the average employer. The rule is based on the best available evidence and represents a reasonable decision, both to protect workers and to reduce costs. A "money back guarantee" of the type described here would be impossible to administer and would give rise to considerable future litigation, thereby unnecessarily and inappropriately increasing costs to employers. A promise to "gift" state funds in the future would also raise important constitutional questions. L&I *does* intend to evaluate the rule and its effectiveness, in accordance with the Administrative Procedures Act. As indicated above, the principles upon which the risk factors in the rule are based are well-established and sound.

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6	**Tech**nical assistance	
6.01	**Have education and training instead of the rule** "Employers at the conference unanimously voiced the opinion that and ergonomics rule was unnecessary. Both employers and employees agreed that L&I should focus on education and training on the causes and remedies of MSDs, rather than rulemaking"	L&I has concluded that rulemaking is a necessary part of a comprehensive strategy to reduce WMSDs. The alternatives considered are described in more detail in the CES narrative.
6.01	**L&I needs to develop more successful voluntary pilot programs, such as the nursing home initiative, rather than adopt a mandatory ergonomics rule.** "The Department of L&I needs to develop more cooperative pilot programs. We applaud L&I for working with our providers to reduce injuries with the nursing home initiative program." "But with the pilot program that the State of Washington has implemented, and I want to applaud them also for their forethought in this, the program is working very well. We have 29 facilities in this program. And I had an opportunity, also, to work with these facilities. We're seeing great successes, not only in those facilities, but other facilities that have drastically reduced the work-related injuries and cumulative trauma disorders for some of the buildings that have had some of the highest mod rates in the State of Washington. We had a gentleman up here commenting on the pilot programs for their industries, also. I also have experience in the construction industry, and other industries that I can see the pilot program being very beneficial. And I would like to see this pursued instead of being mandated through this ergonomic rule." The survey also showed that the majority of employers in our state do not perceive a state regulation to be helpful in reducing musculoskeletal disorders. In addition, the survey found that the majority of employers who had reported these injuries, 61 percent, had reported taking steps to reduce or prevent them." "More laws are not the answer. Education works the best in the long run." "We believe the state should develop workable alternatives to ergonomics rules, such as enhancing current educational efforts, technical assistance, outreach and encouraging voluntary innovation."	L&I has determined, for reasons described in more detail in the CES and in response to other comments, that rulemaking is a necessary and appropriate part of an overall strategy to significantly reduce the risk of WMSDs in Washington workplaces

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	"We welcome the opportunity to work with L&I to develop a workable alternative to ergonomics regulation, an approach that would be acceptable to both labor and industry. Specifically, we suggest the development of industry-specific ergonomics guidelines." "We have a long list of examples where employers and employees in our industry have sat down together to solve real world problems successfully, voluntarily, without government interference. Lets add ergonomics to that long list." "ORC continues to believe that education of employers is a crucial element, and that development of industry-specific model programs and sponsoring of industry-specific "best practices" conferences will be of immense value to employers in protecting employees." "Support legislation which would require state agency pilot projects to test the rule for cost and effectiveness prior to adoption"	
6.02	**Develop training and education before implementing the rule** "However, we as a company have to still remain in business to have employees, and to do this we need to focus on our company goals, and not be forced to pioneer or solve unidentified problems that would be better clearly determined by L&I." "If the department knows what causes ergonomics injuries and how to prevent them, then your inspectors should be able to tell employers exactly what they need to do." "The rule is based on "best practices." The department is asking businesses with no ergonomics experience, to experiment with developing "best practices" without any assurance that they will be accepted by L&I inspectors." " I do not understand why L&I does not use qualified people in their specific trades to make safety rules instead of using so called experts to make rules for trades that they know very little about. People actively involved in the trades know more about safety for their own specific trades than some safety expert that has no experience in each trade."	The problems addressed by the final rule are not unidentified. L&I has determined the level at which physical risk factors become hazardous, and this is reflected in the specific criteria in Appendix B. We will work with employer and employee organizations at the beginning of the phase in period to develop guidance on assessing these hazards and assistance in developing controls as appropriate. Traditionally, the best solutions for these hazards have been developed through cooperative efforts of industry and workers, and we believe that this process needs to continue. The rule is based on elimination of specifically identified risk factors, not "best practices." The rule does not require employers to implement "best practices" – these practices are mentioned only as a compliance *option* for employers. Best practices developed in conjunction with or accepted by L&I will be accepted by L&I inspectors as being in compliance with the rule. L&I recognizes that the best solutions to ergonomics problems can often be developed by the workers and employers themselves. While the risk factors themselves – and their relationship to WMSDs – do not change, the rule provides considerable flexibility for employers and employees to determine which solutions will work best in their particular work.

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6.02	"The proposed rule contains a list of five items the department has committed toward helping employers with implementing the rule: developing ergonomic guides & models; identifying industry best practices; establishing inspection policies and providing; testing guidelines with information employers; and providing information on ergonomics. I believe these items should be carried out before compliance requirements are imposed on all employers." "L & I has promised identification of best practices in each industry; development of ergonomics guides and modeling; establishment of inspection policies and procedures; testing guidelines with demonstration employers; and provision of ergonomics compliance examples and information. These promises must be kept and L & I must be made accountable for their delivery."	The rule does not take effect in any industry until July 1, 2002, and no controls need to be in place until July 1, 2003. For some employers, the rule will not take effect until July 1, 2005 and controls will not be required until July 1, 2006. This long implementation schedule allows a number of technical assistance activities by the department prior to rule implementation. Many of the items described in the rule will be in place before enforcement. L&I is currently working with an Ergonomics Toolbox group to help identify best practices for industries who would be expected to comply with the rule first. However, L&I has not promised identification of best practices in each industry. We are also working with a similar group to develop education and training materials. We recognize that developing these materials will take time, and the reasoning behind the lengthy phase-in period for the rule was that it would allow all groups, not just L&I, enough time to develop these materials.
6.02	"We suggest that L&I should bear a large part of the responsibility and cost for providing the necessary training and technical assistance required by the regulations".	The implementation plan includes a considerable commitment on the part of the department to develop and provide technical assistance regarding the rule, including a basic ergonomics awareness module that can be used by any employer to fulfill that requirement in the rule. In addition, the cost-benefit analysis has concluded that employers will benefit from decreased workers' compensation and other costs under the rule and the average employer will receive a net benefit from compliance with the rule.
6.02	"Training and education is the cornerstone of any good safety program. When our contractors have called the Department for help on job site ergonomic assessments, they are told that no help can be given to the field. Only to the office environment of their businesses. AGC would prefer that an educational and training program be instituted by L & I prior to implementation." "Delay implementation of the proposed rule until education, technical assistance and outreach is readily available—not just work in progress."	L&I has responded to consultation requests involving ergonomics (and not only office ergonomics) for many years. In addition, several educational materials are already available (both from L&I and from other sources). Finally, the long phase-in period for the rule was designed in part to allow for development of further materials before the rule is enforced.
6.04	**L&I should be involved with employers, help them to develop solutions.** "I can tell you that it's not unusual to wait up to six months in some areas of the state for a Department of Labor and Industries occupational or physical therapist, vocational counselor, risk management or safety person to be available under the present circumstances. In fact, in some areas, the safety and risk management staff appear to do compliance inspections only at this time, and are not available for any employer assistance. If we are depending on the present staff numbers to be able to provide the needed assistance to employers in sorting out their WMSD hazards and	The rule is designed to allow employers, working with their employees, to assess jobs and develop controls in most cases without the assistance of L&I staff or private consultants. However, L&I understands the need for assistance programs. The department will continue to provide consultation and other forms of assistance and intends to increase these services as resources permit. The department has approximately 50 consultants and will prepare many of these consultants to assist employers with the ergonomics rule. L&I does not, however, expect to meet all employer needs for assistance. No risk management staff do any enforcement work, and a significant portion of

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	altering the jobs to minimize the risk, then this will not get done. The only other alternative for employers is to spend money on private ergonomic specialists for the needed assistance" " You state that for over ten years your department has been trying to educate people as to WMSD hazards and how to reduce or eliminate them. Right now there is not one L&I ergonomic workshop available on this side of the state except for office ergonomics. Where is the availability for training and education? How many consultants do you have trained in ergonomics who are available to assist employers like us in identifying WMSD hazards and eliminating them?"	the safety staff is dedicated to consultation and technical assistance, rather than enforcement. The department has provided workshops and other materials on general ergonomics and on lifting, as well as on office ergonomics. The workshops are typically scheduled based on the level of interest by employers and others in attending them. The department also provides training in other contexts, including working through associations and working with specific employers.
6.04	"We hope that WISHA would be involved in the process of helping employers to come up with the solutions to their job hazards" "We encourage you to fund a technical assistance or training program for employers." "we also requested that your department establish a committee consisting of a person(s) from labor and management of each craft to come up with guidelines on how to better apply the rule to each craft." "Technical Assistance is Essential. Most cities, especially the smaller ones, do not have the technical expertise to interpret and apply the regulations. This mans that a consultant would have to be hired to help them at a rate of $50-$150/hour."	The rule is designed to be relatively simple for employers to apply, especially when making the initial caution-zone assessment. L&I will continue offering workplace consultations and training programs in ergonomics, and we will work with industry associations and other groups to develop solutions, particularly in the highest hazard industries. The department intends to devote substantial resources to creating and disseminating such materials during the implementation period. However, the department does not have unlimited resources to devote to these efforts, and we encourage industry and labor groups to work towards these same goals. The Legislature has separately created and funded the Washington Safe@Work grant program, which makes resources available to organizations to develop innovative safety and health solutions. It is likely at least some of the grants issued under this program will relate to ergonomics.
6.04	The Department needs equipment rental program for data collection. No measurement equipment available for measuring the different risk factors.	The rule is designed in a way that no measurement equipment (other than commonly available equipment such as scales) is required to evaluate the jobs for both the caution and hazard zone job identifications. Determination of the risk levels could be done through observations and interviews of job performance. Knowledge of the jobs will help to evaluate the risk levels.
6.05	**Other Resources** "The question comes to mind how many of these unions currently has an Ergonomics Training Program in place for the Apprentices and the Journey Level members? The Department of Labor and Industries helps to administer the Apprenticeship Programs for many of the Unions. How much Ergonomics Training has the department provided for the Apprenticeship Programs? If the Trade Unions and The Department of Labor and Industries have Identified the Problems and some of the problem is with the individual workers habits in the work place, why have	L&I has worked with apprenticeship programs in the past to assist in developing training for their members. An example of such an effort was the "Ergonomics for Carpenters" training program done by the United Brotherhood of Carpenters. In addition, several trade union members testified in the public hearings that their organizations would be eager to work with L&I and employer organizations to develop and conduct training related to this rule. Finally, several trade unions have applied for Safety and Health Grants from L&I, specifically proposing to develop ergonomics training.

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	they not addressed the problem in the Apprenticeships? From this point of view it appears the Department of Labor and Industries and the Trade Unions are part of the Problem and not part of the solution."	Effective ergonomics solutions in many work places are not simply a matter of training and "individual worker habits," however, and solutions implemented by trade unions without the participation and active leadership of business are not likely to be fully effective.
6.05	" I see the training thing to be just insane. I can't go out into the market place and purchase a coastal training thing or a J.J. Keller training thing or – I can't buy anything outside the state and implement training throughout our workplaces when we have a completely different regulation than the rest of the country." " Unfortunately, if you're going to buy a canned program, the only canned programs that I have seen out there have been focused on office ergonomics, and again being a utility, we do have positions that have a typical job classification and that you can reasonably expect a situation to occur."	L&I is working with an Ergonomics Toolbox group to develop "model" awareness education materials that employers can use to satisfy the education requirement in the rule. The job specific training will most likely be unique to every industry, and in some cases to individual workplaces, as part of the controls selected by the employer. Industry groups have the option of working together, with L&I assistance in many cases, to develop industry specific training materials, either as part of their Best Practices or as a separate effort. Vendors of "canned" programs will also respond to the new regulation and produce videos specific to this rule. L&I will make every effort to have these videos available for check out from our video library.
6.06	**Provide training to employees in small businesses** "Labor and Industries should provide ergonomic training to employers with 11 or less employees. These businesses do not exceed a financial gain to hiring a $50-, $60-, $70- $80,000-a-year consultant."	L&I has traditionally focused its consultation, outreach and training efforts in helping small businesses, recognizing that they do not have the resources required to hire consultants or purchase expensive training materials. The agency will work with groups to develop training materials that are geared towards helping small businesses comply with this rule. These materials will be simple enough for small businesses to deliver the training without the need to hire outside consultants.
6.07	**Work with Industry on Best Practices** "We encourage L&I to work the Association of Washington Businesses (AWB) to develop technical assistance programs" "We don't understand why L&I refuses to work with the Association of Washington Business who has repeatedly offered to help L&I develop technical assistance programs"	L&I is currently working with a number of individuals and organizations to develop an Ergonomics Toolbox consisting of technical assistance materials. These groups are an open forum to which all interested parties were invited to participate. L&I has never refused to work with the AWB on technical assistance programs. However, L&I does not consider technical assistance to be an acceptable substitute for this rule.
6.08	**Referenced tools are not clearly or adequately defined, and a referenced general performance method is not accessible.** " The Department is planning on setting forth best practices standards and industry-specific guides to assist with implementing these regulations; and we are requesting that these standards and guides be in writing in handbook form and be as explicit as possible so that credit unions know exactly how to comply with this regulation. As the Department is planning to work closely with trade associations to develop best practice standards and industry –specific guides, the League would like to work closely with the Department to develop these best practices and guides."	L&I appreciates this and other offers to work on best practices. Our current focus is on working with high hazard industries, those who will be in the first round of compliance with this rule. Associations in other industries may want to begin working on best practices efforts during this same time, rather than waiting for L&I to initiate the project. L&I will provide whatever assistance it can to groups interested in developing best practices and other materials as resources allow, but it will not be possible for L&I to facilitate all of these efforts.

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6.08	"Hand Arm Vibration Standard is the only nationally accepted and recognized consensus standard listed. If the remainder of the referenced material are widely accepted, then who accepts them, where, and when? L&I would be the only answer. Simply referencing ergonomic sources in the proposed rule doesn't make them widely accepted, or for that matter, credible."	In response to comments L&I has replaced "widely accepted nationally recognized" to "widely used" methods. L&I believes that each of the listed methods is widely used and that each one includes appropriate hazard control levels. These listed methods also provide a benchmark against which other methods can be measured.
6.08	" I spent one day trying to pull the referenced tools via computer and scored zero. These "tools" must be made available prior to any rational decision as to whether they might be useful to the construction industry. (Job Strain Index requires an Air Force access code to get past www.satx.disa.mil/hscoemo)	For employers who wish to use a specified set of criteria, Appendix B is part of the rule and provides the hazard analysis criteria (and can be used by employers within the construction industry and other industries). The general performance option provides examples of widely accepted tools (which are clearly defined by specific references). Most of these examples are readily accessible.
6.08	"The department's standards reference ANSI standards and the DOE ErgoEASER that are very difficult to access and utilize. Prior to final implementation, the Department of Labor and Industries should provide more reasonable access to such resources. In the alternative, the department should develop its own resources." " For the same reasons, it would be helpful for the Department to publish the "widely accepted nationally recognized criteria" for analyzing "caution zone jobs" and identifying MSD hazards that must be reduced, which are referred to in the rule. Proposed WAC 296-62-05130(1). To the extent that employers are unfamiliar with occupational health and safety literature, they may have difficulty locating these standards and analyzing them. To facilitate employers' use of these reference standards, L&I should publish these criteria as appendices to the ergonomics standard. This will greatly facilitate compliance with the rule."	The referenced standards are not required by the rule, but instead are examples of alternate criteria that employers may use to assess their jobs. The option to use these criteria was intended to allow employers who are already using them or employers with the resources to use them effectively the opportunity to do so. L&I has provided complete references to these documents in the rule and will work to make these references as widely available as possible; however, due to copyrights and other issues, we will not be able to republish every reference.
7	**The rule is too vague or too specific**	
7.01	**L&I's proposal is vague and not specific enough** "…the standard be more understandable to the common person. Most employers do not have anyone with an ergonomics background employed. Complying with this standard will require hiring a consultant to assure compliance. It must be rewritten so the common person can both understand and comply." "As a small employer, the rules are not clearly written for the employer and employees to understand. Potentially we will have to retain an ergonomist and attorneys to defend our practices under these proposed rules."	L&I has worked to make the rule as clear as possible. In response to comments about clarity and areas of apparent confusion, several changes were made to the final rule to improve clarity. See the CES narrative for a more detailed discussion.

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	"NFIB is also very concerned about the ambiguous language in the rule and believes that this will lead to confusion for most small businesses. Even the more specific standards are not very clear and according to small business owners who have reviewed the rules, would be difficult to comply with. Most of the small business owners we talked with felt they could not be in compliance no matter which direction they chose to go."	
7.01	"The proposed standard is too vague and will allow the department far too much discretion in levying penalties and directing employers' efforts toward reducing alleged hazards." "Quite simply, it is impossible for employers in this state to clearly define their obligations pursuant to these regulations." "The proposal is promoted as flexible; however, it is vague in terms of compliance goals and requirements." "Without SET GUIDELINES inspectors will develop their own interpretation of the RULE. A company could be in compliance with one inspector and not in compliance with another." "It is unclear how this rule would be applied in a work environment where employees have different exposures on different days." … high performance work system whereby employees are cross-trained to perform a number of jobs and can move between these jobs both during a shift and between shifts … Should activities be added up over the shift and approximated over several days? These issues are not addressed in the proposed rule"	The rule provides specific criteria for assessing risk factors. Inspectors will not be able to require controls unless they can document that the employer has hazardous exposures based on the risk factors. When such exposure has been documented, inspectors will not be able to require specific controls; the employer will remain able to choose between feasible control measures as described in the rule. Inspectors will not develop their own interpretation of the rule. L&I will establish inspection policies and procedures, will discuss these with business and labor prior to implementation, and will train inspectors in order to ensure consistency. The rule strikes an appropriate balance between flexibility and precision; employers who want specific guidance can rely on the specific performance option to determine whether or not controls are necessary; employers who want greater flexibility can rely upon the general performance option. See the CES narrative for a more detailed discussion of job analysis for non-fixed worksites and variable assignments.
7.01	There is variability of employees using tools, workstations and performing tasks. It is too difficult for employers to conduct workplace hazard assessment for all the workplaces and all the employees. Employees may perform multiple tasks during a day or different tasks in a week. It's not possible to analyze all the tasks.	When multiple tasks are performed during a day or a week, the employers may use a screening approach by looking at the duration and frequency of tasks where possible risk factors may exist. In this way, if the duration is not long enough or the frequency is not fast enough to cause the risk factor reach the caution zone limit or the hazard zone limit, no further assessment is needed. The employer only needs to concentrate on risk factors with combinations of high frequency and long duration.
7.02	**Caution Zone Too Vague/Difficult To Use** "Caution Zone Jobs: The language intimates that an employer can readily identify when the standard applies. Not true. For example, is a drywall carpenter running a screw gun covered under the "high hand force" portion of the standard."	"High hand force" is not the risk factor; it is a heading for two very specific risk factors involving the use of a "pinch grip" or a "power grip." The explanation of the risk factors has been modified somewhat in the final rule to make this point more clearly. In the example, a drywall carpenter running a screw gun that weighs more than 10 pounds would be covered *if* he or she holds the gun more than two hours. The final rule clarifies the determination of high hand force in three ways.

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	"There should be some clarification of how to characterize the total workshift duration of a particular posture or motion, as stipulated in the CZJ table, when it occurs intermittently for short periods of time rather than more continuously."	First, the rule specifies gripping unsupported object, not any object. Second it specifies gripping a 10 pound object rather than a 6 pound object. Third, high hand force may also mean gripping any object with a force of 10 or more pounds (comparable to clamping a light duty automotive jumper cable). This should make it easier for an employer to make a reasonable determination of whether a job running a screw gun is a caution zone job. The final rule clarifies that duration refers to the total amount of time per day employees are exposed to the risk factor, not how long they spend performing the work activity that includes the risk factor.
7.02	"Clarify the definition of caution zone jobs. Define the length of the total workday, workday frequency, recovery periods, and job rotation. We would suggest that a caution zone job definition be expanded to include the number of subsequent shifts (five shifts) that a task is performed. For example, squatting two hours out of eight is a caution zone job if it is performed for five shifts in a row."	L&I agrees that the proposed rule required clarification. Typical work activities are defined in the final rule as "those that are a regular and foreseeable part of the job and occur on more than one day per week, and more frequently than one week per year."
7.02	"The standard is not clear as to who is included or excluded. This will become an issue later, and should be addressed now: If specific heavy equipment (including trucks) is excluded from the vibration standards then the standard should note that. The standard should identify what movements are exempt, as well as what equipment. For example, "twisting" is not mentioned, therefore can be assume that excessive twisting is OK? Truck vibration in not mentioned so is it exempt?"	The standard specifically describes what it covers, not what it does not cover. If activities do not fall within the items described, they fall outside the scope of the standard. The vibration language in the caution zone specifically refers to hand tools and the "category" has been clarified to reflect hand-arm vibration. This does not include trucks and other heavy equipment. Likewise, "twisting" as a lone risk factor falls outside the scope of the standard (although it is addressed as part of an assessment of lifting in Appendix B). It would, however, be a mistake to assume that because the rule does not address a particular hazard, that hazard is "OK." Twisting and truck vibration, for example, may well be hazardous. They are simply outside the scope of this rule. This rule does not nullify other general requirements for employers to protect employees from recognized hazards that are not addressed in specific rules.
7.02	Because of their disabilities many workers perform very repetitive tasks Fridays are always the busiest day at the credit union and on Friday the keying might qualify as "intensive keying for more than 4 hours per workday" while on Tuesday the keying volume might not be as heavy . . . Administrative/Executive Assistants and most of our clerical positions . . . . could fall under the "highly repetitive motion" category. If 50 percent of these positions ultimately qualify as caution zone jobs, and each workplace hazard analysis requires a minimum of 30 minutes, we are looking at a fairly significant time investment.	The rule does not supersede existing rules or regulations and does not conflict with the requirements for disability accommodation. The rule does serve to prevent workers from being injured and to prevent further injury to workers that already have been disabled. The caution zone job determination is based on typical work activities, which has been clarified in the final rule. If exposure occurs only one day per week (or only one week per year), the job is not a caution zone job. If it occurs more than once per week and more than one week per year, the job is a caution zone job. Many clerical and other office jobs will not fall within the caution zone because

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		they do not perform *intensive* keying. For jobs that do, it is not necessary that an individual hazard analysis be developed and that individual controls be implemented. The employer can rely on representative sampling to complete the required analysis. Intensive keying is a unique type of highly repetitive motion and is addressed as such in the rule. A further discussion of the risk factors and the caution zone/hazard zone levels can be found in the CES narrative.
7.02	Caution zone too difficult to identify. Not possible to hire ergonomics specialists. Too time consuming, not possible to purchase equipment for the measurement of repetitive motions.	The department has attempted to make the evaluation methods as simple as possible. The final rule does not require employers to use any specific equipment for the measurements and it does not require employers to hire an ergonomic specialist to perform the job evaluations. The methods provides in the rule are designed to be used by employers. The rule has been designed in a way that no specific measurement equipment should need to be used. For instance, to avoid having to measure hand-arm vibration, the manufacturers' declared vibration value can be used. For the estimation of hand force, common examples are used to subjectively match the force required for job performance. Certain documented risk factors (such as whole body vibration) were omitted from the rule because of potential difficulties with measurement.
7.02	Every job in today's industries would qualify as a caution zone job based on the proposed Ergonomics Rule. That means all jobs have to go through the detailed hazard evaluation using the widely-accepted national recognized criteria.	It is not true that every job in every industry is a caution zone job as defined by the rule. The number of caution zone jobs are varied by industries. We have used the caution zone criteria in a number of workplaces, and only a small percentage of jobs fall into the caution zone category.
7.02	It is difficult to understand how the agency will define typical work. For example, would this term be defined to include all work listed in a job description, or the essential functions for which the position exists?	The final rule includes additional language on this subject, and the CES narrative provides additional discussion. Typical work, however, refers to all the work activities of a position, regardless of whether they are identified as "essential functions."
7.02	L&I needs to develop more cooperative programs with different industries where they help pay for the cost, and identify the possible benefits over time, as you have done with the zero lift program for nursing homes. The Department also needs to help industries to solve feasibility problems, such as handling patients.	The department is developing additional cooperative programs with different industries. The implementation plan in the rule includes the development of ergonomics guides and models through closely working with employers, identifying industry best practices in cooperation with employer and employee organizations, and providing information on ergonomics based on experiences of employer and employee organizations.
7.02	Should the duration be task duration or risk factor duration?	Duration as one of the hazard dimensions (together with level and repetitiveness) refers to duration of actual exposure to the risk factors, not of the tasks that include the risk factors. The final rule clarifies this point.
7.02	The Department maintains there are jobs or activities that are not covered under this definition. Those jobs should be specifically described in order	The rule specifically describes those jobs that are covered by the rule, rather than those that fall outside it. The rule states that jobs that the employer reasonably

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	to relieve small business owners from the unnecessary, time-consuming and costly burden of assessing the jobs the department has determined are not covered by the Rule?	determines do not fall within the caution zone are not covered by the rule. The caution zone assessment has been designed to be performed rapidly and easily by most employers.
7.02	The rule makes a generalization of performance of the task without taking into consideration of intermittent rest periods or breaks in between the flow of materials. Is an inspector going to be allowed to add minutes performed within a certain time frame and judge accordingly?	The determination of caution zone jobs needs to be as easy as possible so that the employers could conduct the evaluation with minimal efforts. Therefore, the issue of intermittent task performance is combined into the consideration and the duration is defined as total time spend on the specific risk factor. Therefore the time should be added for the whole work shift, with breaks or other tasks excluded from the calculation. However, intermittent rest periods and breaks could be considered in the more detailed process of analyzing and reducing WMSD hazards when using either the general performance approach or specific performance approach.
7.03	**Hazard Analysis Vague** "With respect to workplace assessment, the rules give relatively little guidance on how the assessment should actually be conducted. They do state that the person doing the assessment should know how to use the analysis method effectively, which assumes that the person will need to be well versed in what analysis methods are both available and appropriate. This means most likely a need for bringing in an outside consultant, which will be an additional cost to employers." "The methodology under Appendix B is also unclear. The appendix lists many time restrictions for hazardous activities, but there is no guidance for how employers should measure these time periods. For example, a squatting duration of 4 hours is the proposed threshold in Appendix B. Are employers required to time the duration of each squat or the period over which many squats are taken? This type of analysis would require significant expertise and expensive equipment that is largely unknown to most employers."	For employers who desire specific guidance, Appendix B provides a step by step methodology. The final rule addresses the specific concern by making it clear that the employer should measure the actual duration of the exposure to the awkward posture or other risk factor that should be measured, not the overall duration of the task that intermittently includes that exposure. L&I has limited this rule to requirements including job analysis that employers will be able, in almost all cases, to meet without the need for outside consultants.
7.03	"We would also likely err on the safe side by evaluating jobs that may later prove unqualified as caution-zone jobs, so we may end up assessing more positions than might otherwise be needed in our efforts to fully comply with the rules." "The tools for performing the (job analysis) evaluation simply do not exist. One consultant would have to sit with one employee for an entire week making the measurements and adding up the time of overexposure to assure the job position is or is not typically (meaning regular or foreseeable) a "caution zone job" or "WMSD hazard"."	The rule provides relatively clear guidance about the scope of the rule. To the degree employers choose to provide more employees with protection, that is to their credit, but it is not a requirement of the rule. The tools for conducting the necessary job evaluations do exist. In those cases where evaluation would be particularly complex (whole body vibration and push/pull hazards, for example), the department did not include them in the rule. L&I does not intend for employers to do lengthy, complex job analysis for each employee every day or to hire expert consultants to evaluate jobs under most

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		circumstances. Representative sampling is acceptable and the CES narrative contains several examples and a more detailed discussion.
7.03	The appendix B does not allow employers to better identify caution zone jobs, and it does not contain information for all industries.	Appendix B is intended for hazard evaluations, i.e. after jobs have been determined as caution zone jobs using the simple checklist (WAC 296-62-05105) on page 3. Both the Appendix B and the caution zone checklist are designed to evaluate certain risk factors that are related to musculoskeletal disorders, rather than specific industrial tasks. Although they do not specifically reference various industries, they contain information that can be applied to all industries to determine whether the identified risk factors and/or hazards exist.
7.04	**Education requirements too vague** "Your definition of what "ergonomic awareness education" must include needs to be more definitive, particularly items #2 and #3. How is an employer to get information on all the different types of WMSDs available or that could possibly occur in his work place? In addition, how is an employer to identify all the possible the measures to reduce them? As our employers do not have ergonomists on staff, this requirement leads to the conclusion that each employer will need to hire an ergonomics consultant to help identify these points."	The ergonomics awareness education requirements have been clarified in the final rule. In addition, the department will be providing model programs that an employer can use to comply with this requirement. No employer will need to hire an ergonomist to comply with the ergonomics awareness education requirement.
7.04	"The educational requirements are too vague. Define what they want for education. I suggest that you include as detailed information on training as OSHA did with their forklift standard. Employers are required to be aware of ergonomics and – excuse me. Employees are required to be aware of ergonomics and the risks of their job, but employers are required to identify the risks." "Employees are required to be aware of ergonomics and the risks of their jobs. But employers are required to identify each risk. The standard is not specific on the detail of risk that must be trained."	The awareness education requirement is intended to be portable. The rule specifies the subject matter and the final rule was modified to require that the basic awareness education address all caution zone risk factors. Employers can ensure compliance by using the ergonomics awareness education module that L&I will make available.
7.05	**How much hazard reduction is enough?** "Establish clearer compliance goals and standards. While we realize that you are trying to maintain flexibility for the employer and avoid mandating costly measures, we believe you have not given us a clear idea of how much will be enough to avoid being cited. There appears to be no consideration of cost-benefit calculations to determine where the law of diminishing returns would argue that enough has been done." "There is no specific language on what to do to prove compliance:	The rule requires employers to reduce exposures to the risk factors specified until they are below the hazard level. The risk factors are specified, and a hazard control level is specified in Appendix B (or the employer can choose their own hazard control levels from, or equivalent to, a number of widely used methods). Employers will know they have done enough to avoid being cited when exposures to risk factors are below the hazard level. In many cases simple cost-effective solutions will be available to reduce exposures below the hazard level. The rule does recognize that there may be circumstances where controls may not be

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	Neither the standard nor Appendix B provides tools to help employers comply. L&I should include specific language to demonstrate methods that can reduce hazards." "The issue gets down to, what is defined as a "caution zone job" and will the employer be back by the department when he makes that determination? What happens if the department disagrees? Will a complaint for a disgruntled worker or someone who may not be fit for the job cause an enforcement action?" "Is an employer to perform the required analysis for every employee who works in a "caution zone job"? Is it acceptable to estimate the weight of the objects lifted, the angle of movement, or the time spent at each task, or must the employer take exacting measurements and commission time-consuming and costly time-and-motion studies? Must the calibration and vibration levels of every single piece of equipment in the workplace be identified, and when is the proper time for making that assessment? When the equipment is new or after repeated use has effected its level of performance? And what is an employer to do if a particular task appears to have a CTD hazard for short employees but not for those who are taller, or only for those employees with small hands, or who work in cold areas, or who are overweight, or female, or of advancing age?"	technologically or economically feasible. In these cases, the employer will only be expected to do what is feasible and will be in compliance until (and if) a feasible control becomes available. Appendix B does provide a useful tool for employers to determine if employee exposures to risk factors are above a hazardous level. Additional helpful tools will be provided by the department during the long phase-in period before the rule is enforced. There is a large body of information available on various controls that will reduce WMSD hazards. Many companies have employed such information to reduce WMSD hazards in their workplace. The department has provided information on ways to reduce WMSD hazards for many years and will continue to do so. During the phase-in period the department will work to develop industry-specific best practices and identify other resources that may be available to employers who need help in identifying hazard reduction options. In identifying caution zone jobs, the rule clearly states that an employer's reasonable determination whether he or she has caution zone jobs will be accepted. The risk assessment is limited to those factors included in the rule. It does not include age, gender, or physical condition. Height is relevant only to the extent that it affects the nature of the risk factor (e.g., overhead reaches). Employers do not need to analyze every employee in every job, but can rely on representative sampling, which is discussed in further detail in the CES narrative.
7.05	"Indeed, this seems to be an ongoing problem with ergonomic recommendations in general. What is accepted at one point changes at a later time. Given that the science of ergonomics appears to be evolving, how will the department treat employers who comply with one recommendation only to find another recommendation is issued at a later date. Will we be expected to modify our workstations and positions each time something new is recommended? Who should we look to as the definitive answer when there are conflicting recommendations?"	The employer is in compliance when the hazardous exposures have been eliminated because the risk factor has been reduced below the hazardous exposure level in Appendix B (for employers relying on the specific performance approach) or below the hazardous exposure level in the method selected by the employer (for employers relying on the general performance approach). Even if new recommendations or approaches are developed, such an employer will remain in compliance.
7.05	"The department requires employers to reduce WMSD hazards to the degree feasible. Is this to be another independent call by the inspector? All in all, this proposed rule will cause such a back log of board hearings and I believe that inspectors will be spending more time in these hearings trying to defend their interpretations, rather than in the field implementing	L&I does not agree that the rule is vague or that it violates Executive Order 97-02. Unlike most WISHA rules, this rule explicitly includes provisions for feasibility. L&I believes that this increases the rule's clarity and will reduce the likelihood of disputes.

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	and overseeing safe practices." "The proposed rules require under the "specific performance standard" that employers take action to not exceed the physical risk hazards to the extent feasible. There is no definition for us to know if what we have met this requirement. Yet, we face citations and possible fines for failing to meet this requirement. It is unfair for the department to adopt a rule that is so incomplete, unclear and unfinished. Such vagueness violates the Governor's Executive Order 97-02 on rule clarity. The proposed rule will create a huge number of disputes over whether the requirements of the rule have been met or not."	Employers are not simply required to reduce hazards to the degree feasible. They are required to reduce hazards below the hazard level. Only if that is not feasible are they required to reduce them to the degree feasible. If the employer has reduced exposure below the hazard level, the question of the feasibility of any further reductions is moot because the employer is in compliance. Feasibility is an established legal concept. The final rule adds the term "economically and technologically" to clarify the meaning of feasibility. A number of commenters have advised that L&I not define it further in the rule. See the CES narrative for a more detailed discussion.
7.05	"The desired goal/outcome has not been clearly defined. For example, it states "Reduce employee exposure to workplace hazards." How much does "reduce" mean?"	In fact, the rule answers this question very specifically. For employers using the specific performance option, the hazardous exposure must be reduced below the hazardous level identified in Appendix B. For employers using the general option, the exposure must be reduced below the hazardous level identified in the method they are using. If such a reduction is not feasible, then the exposure must be reduced to the extent feasible.
7.05	"Although the rules define what jobs are hazardous, the proposal fails to tell what is required to "reduce" these hazards? What do you have to do to comply with these rules? How much reduction is enough? L&I needs to answer these fundamental questions first, not adopt the rules and spend the next 5 years trying to answer them or force the employer's to answer them." "…vague standard for what is an acceptable hazard control, i.e., "reduction of all WMSD hazards below the criteria chosen in WAC 296-62-05130(1) *or to the degree feasible*." "These proposed rules require under the "specific performance standard" that employers take action to not exceed the physical risk hazards to the extent feasible. There is no definition for us to know if we have met that requirement; yet we may face citations if we don't meet the specified requirements. It is UNFAIR for the Department to adopt a rule that is so incomplete, unclear and unfinished, without set guidelines for employers to follow. Such vagueness violates the Governor's Executive Order 97-02 on rule clarity." "It also should be explicitly stated that, when complete control of a hazard	The rule clearly requires the employer to reduce exposure to the risk factor until it is below the hazard level. Until it is reduced to that point (using either the specific performance approach or the criteria relied upon by the employer in the general performance approach), it has not been reduced "enough." In most cases, feasibility should not be an issue because the employer will be able to reduce exposures below the hazard level. Feasibility only becomes an issue if the employer believes that he or she cannot reduce the exposure to the point that it is no longer a hazard in the context of the rule. The final rule makes it clear that feasible means "economically and technologically feasible." The rule does not establish new principles for interpretation of feasibility. See the CES narrative for a more detailed discussion. The rule does not require specific control measures (in order to avoid a "one size fits all" approach). However, the department will be developing a range of technical assistance, and such materials are already available from a variety of sources in many industries. The rule now includes clear language that feasible partially effective controls must be implemented when fully effective controls are not feasible.

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	is (relatively) not feasible, but a partially effective control is feasible (i.e., one that would reduce a physical risk factor but not below the specified threshold), then the employer should still implement the partially effective control. Otherwise, employers may feel no compulsion to utilize partially effective controls, concluding that any expenditure on such a control would be a "waste" of money, because of the remaining hazard and continued risk for citation."	
7.05	"Given that the science of ergonomics appears to be evolving, how will the department treat employers who comply with one recommendation only to find another recommendation is issued at a later date? Will we be expected to modify our workstations and positions each time something new is recommended?"	The need for a level of certainty is one of the reasons L&I did not pursue a "program standard." The rule does not require implementation of the most recent controls (although it allows sufficient flexibility for employers to take advantage of new developments in the science of ergonomics). Employers will not be expected to make any further changes once they have reduced exposures below the hazard level, regardless of what new recommendations may be on the market. Employers who have not yet reduced controls below the hazard level because feasible methods were not previously available may need to make additional changes when new approaches become feasible See the CES narrative for a more detailed discussion.
7.06	**The requirements need to be tighter.** "As far as your regulation and stuff here, I actually feel that they need to be a little bit tighter."	The rule balances scientific information about risk factors and control levels and the employer's ability to comply with the requirements. The final rule is not as strict as some might desire, but it represents the department's best judgment of appropriate rulemaking at this time. The rule will not prevent all WMSDs.
7.07	**The rules should be industry-specific.** "We have made many changes in the workplace and in our industry over the years, and I know we need to make some more; however, I do believe that rules should be industry specific."	Although control measures may vary from industry to industry, the fact that the risk factors described in the rule represent a source of WMSDs will be consistent across industries. The rule does not require particular control measures, but instead focuses on reducing or eliminating risk factors. In this way, the rule provides direction to all industries without limiting an employer's flexibility in identifying and selecting appropriate controls.
7.08	**Consequences of violations unclear** **"**The rules are unclear about the consequences if L&I determines an employer is out of compliance. These proposed rules do not recognize employers who make a good faith effort as being in compliance. L&I is proposing to work with a group of demonstration employers to develop these procedures while the rule is in effect. The rules, guidelines and procedures are not developed enough to know what is required."	Individual WISHA standards do not normally describe the consequences of non-compliance. Employers who are not in compliance with the rule after the effective date for their industry and size will be subject to citation for those violations and may be subject to penalties (particularly in the case of serious violations). When penalties are assessed, the statute directs L&I to consider the employer's good faith attempts at compliance. An employer who has made an effort to comply but has fallen short is not "in compliance." However, the consequences in such cases are less severe (provided the employer takes the necessary steps to come into compliance after the citation), and penalties are reduced for employers who have demonstrated good faith. WISHA's penalty rules, including an explanation of good faith, have recently been adopted as part of Chapter 296-350 WAC.

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7.09	**How L&I will verify a program exists** "The rules also state that no written program is required. In that case, how will be employer be expected to document that he/she has a program? What kinds of things will the department need to verify that a program exists? These questions should be addressed in advance, so employers can be in compliance."	The rule does not require a "program," written or otherwise. Employers must meet the specific requirements of the rule. In the event of an inspection, L&I would need to document a violation in order to cite it, typically relying on the inspector's observation of hazards and on employee interviews. While an employer might wish to maintain records of training, job hazard analyses, and control measures that had been implemented in order to help resolve any concerns identified by the inspector, the rule does not require such documentation and the nature of the documentation would typically vary depending upon the size and nature of the employer and his or her operations.
7.10	**The proposed rule does not spell out employee obligations.** "We provide appropriate ergonomic training and tools. If employees sit or stand in improper posture, will we enforce posture procedures for employees who sit or stand for prolonged periods? The department's rule is vague and does not provide any guidance to employees' obligations."	Employees are required under the WISHAct and other standards to follow safety and health rules; that obligation applies here as well. Employers are responsible for enforcing those employee responsibilities when necessary. Certain of the risk factors in this rule, such as those related to working with the neck or back bent, are limited to situations where the employee does not have the opportunity to adjust his or her position. In other situations, employers have statutory protection from WISHA citations in circumstances where there has been unavoidable employee misconduct. This protection will pertain to this rule.
7.11	**Annual review not specific enough.** "The employer review of the program is too vague. In addition to a symptom survey of affected workers, the employer should evaluate injury and illness data on OSHA logs of injury and illness, and worker complaints about "caution hazards". The review would also address any new technology or changes in process and the impact on these on workers' risk. The employer should also put this review in writing and it should be available to all workers."	The department has determined that this rule should not impose new recordkeeping or paperwork obligations on employers. The rule requires employers to involve employees in a review of the effectiveness of its ergonomics activities. It does not prescribe a particular approach for that review. With regard to significant new technology or changes in process, those require re-evaluation of the affected work practices when they occur and should not be left until the annual review.
7.15	**Will L&I inspectors be adequately trained** "It is not appropriate that various compliance officers having varying levels of experience and training be left to the task of defining these vague terms. If any regulations are finally promulgated, they must provide clear guidelines for specific employer utilization." "As we know, we say that, Well, we don't have to go overboard on our assessment, but the, the difference in enforcement by inspectors in the state vary from area to area. Where some inspectors have an objective approach, may take a lot more serious approach to one than some others. So the employers to cover themselves may have to go overboard on their assessments to make sure that they are going to come under that objective approach."	The department agrees that employers, employees and department staff need clearer guidance about acceptable practices and the elimination of hazards. Therefore, L&I's final rule provides clear guidance about the type of risk factors that fall under the rule. Past enforcement experience in relation to ergonomics has been conducted in the absence of a specific standard. The rule helps to correct that problem and to provide greater consistency in enforcement and in expectations. Department staff also will be given further training, and enforcement protocols will be developed to ensure consistent application on their part. These protocols will be developed in consultation with industry labor and management.

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7.15	"How well are these best practices going to be accepted by your investigators? This is especially important since you are leaving it up to us to formulate them for ourselves. How well trained will these investigators be for this new flexibility in the system? Your old investigators were trained to bring everyone in line within a defined set of rules. Is this going to be an overnight change in mindset for them?" "We'd like to know what criteria will be used to instruct inspectors on conducting ergonomics compliance inspections, and will the public have access to these training criteria so that we might train our employees to the same standards?"	L&I inspectors will receive extensive additional training during the implementation phase-in to enable them to enforce the ergonomics rule appropriately; technical resources will also be made available to L&I inspectors who may need assistance in complex cases. Best practices that have been accepted by the department will be shared with L&I staff and will be accepted as appropriate control measures. L&I training materials and policies are public records and can be made available to any member of the public on request.
7.20	**Basis for Widely Accepted Criteria** By what criteria of success were these "widely accepted nationally recognized criteria deemed to be successful?	Most of the methods referenced are directly or indirectly based on epidemiological data – showing relationships between level of risk factors and musculoskeletal injuries.
7.20	How was it determined that the 'guidelines' such as Liberty Mutual Handling Tables, NIOSH Lifting Equation, etc. are, in fact appropriate and feasible for the types of jobs found in a telecommunications industry or major utility?	The guidelines are examples of approaches on which employers could rely in applying the general performance method. To the extent they apply to the risk factors present in a particular type of work in question, they are appropriate. Feasibility is a question to be asked in relation to possible controls, not evaluation methods and hazard levels. Most of the recommended evaluation methods were developed based on laboratory and field studies. These methods provides a guideline to determine the level of certain physical exposure parameters such as weight lifted, body postures during lifting etc. These methods do not specify what kind of job details that the operator is doing (for example, whether a lifting task in a telecommunication company or in a department store's warehouse), but a general task performance (such as lifting task, overhead static work etc.).
7.20	The undefined criteria for analysis of jobs must be "as effective" as a number of recognized criteria, but no objective data is provided that details the effectiveness of any of the offered criteria.	The rule says that employers may choose either the general performance approach or the specific performance approach. When employers use the general performance approach, the department offers the option of using other risk evaluation methods. This is in consideration that some employers may have already performed ergonomics assessments or have used ergonomics consultants who have been using other tools in workplace assessment. Those examples listed in the rule are methods published in peer reviewed journals and been tested at different workplaces. The department has revised the list so that only methods that provide detailed guidelines are included. Of course, there are many other methods available and there are also new methods being developed. Scientific bases are needed to assure the validity and reliability of a selected method *in identifying physical risk factors* that may cause musculoskeletal disorders.

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7.25	**The rule is too inflexible.** "The limits set forth in these proposals are impossibly restrictive." "The proposed regulation is lengthy and complicated. It puts unnecessary regulations upon business. Part of my job is being the safety director for General Supply, and I am very familiar with WISHA regulations. This regulation is by far the most complex and will be the most difficult to comply with." "RESTORE EMPLOYER FLEXIBILITY: The rules go too far by giving extraordinary power to employees to select the measures to reduce hazard exposure." "ORC recommends that WISHA revise its proposal to provide greater flexibility to employers" "Both the general and specific performance approaches take away the flexibility to analysis and control that makes sense for employers. Many employers have retained a professional ergonomist to assist in their job analysis and control. WISHA's proposed rule effectively precludes the use of this professional judgment and flexibility through either the "general performance" or "specific performance" approaches. By dictating the preference of control measures, with engineering or administrative measures first and work techniques or practices second, that professional judgment and flexibility is shackled even further."	L&I has determined that the rule is economically and technologically feasible and that it is not therefore impossibly restrictive. The rule is shorter and simpler than many other existing WISHA rules such as those for hazard communication, confined space entry, electrical hazards, and machine guarding. The rule provides employers with considerable flexibility in determining how to address hazards that can cause WMSDs. It balances this flexibility with specific criteria for determining what constitutes a hazard. In other words the rule provides enough specificity for employers to know whether they are covered, what they need to do to be in compliance, and when they are finished, yet is provides considerable flexibility with regard to how they evaluate jobs and reduce hazards. The rule does not give any authority to employees to make decisions. The requirements for employee involvement in the rule are consistent with (and to a large degree already required by) the safety committee/safety meeting requirements found in Chapter 296-24 WAC and elsewhere. The general performance option provides considerable room for employers to engage professionals to assist with job analysis and control. In reflecting a preference for control measures that do not rely on the individual employee (administrative and engineering controls), the rule simply applies the basic hierarchy of controls that is a longstanding principle of occupational health and safety. We believe that competent health and safety professionals, including ergonomists, are already familiar with this hierarchy and apply it in the workplace.
7.25	[a rule should be] "Flexible and allowing for a variety of abatements, as well as the introduction of new remedies for abatement, for each identified work task/activity without interference of lengthy regulatory action." "there does not appear to be an allowance for flexibility for existing precautions in the proposal"	The rule provides considerable flexibility in determining controls when hazards are identified *and* in determining the method to be used to identify hazards. The rule does not require specific abatement methods.
7.25	"The presumptuousness that any single individual or group can actually successfully plan and lay out rules that make sense for all businesses at such a detailed level is dangerously haughty and fraught with conflicting realities."	The rule identifies specific risk factors, which are risk factors regardless of the nature of the business. It does not specify the type of controls that must be implemented, and it provides considerable flexibility in identifying a method to determine whether hazardous exposures actually exist. The rule does not lay out detailed requirements for all businesses, or for any businesses.

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7.26	**Standard L&I ergonomic checklist not appropriate industry.** "Although using a checklist is a minimal cost, proactive approach to identifying potential hazards, I don't believe using one universal checklist approach for determining a required job change is appropriate."	The "checklist" in Appendix B of the rule is based on the identification of risk factors that are themselves based on the best available evidence and a wide body of scientific knowledge. In addition, the rule does not require that Appendix B be used – the general performance option allows employers to use other effective means of identifying hazards that need to be corrected.
7.27	**Caution zone jobs are too narrowly defined** "The inclusion of specific technical numbers into the standard too narrowly defines a concept behind caution zone job. The standard should define the concept of caution zone job, and then allow the facility flexibility in the implementation of the concept." "Many of our jobs have low-level exposures to cumulative trauma, and with a lot of variables. These disorders make it very difficult to prove or determine what proposed risk factors are relevant. Your rigid checklist, and I'll include all of your checklists, are all virtually the same, and are very rigid, because you clearly define the risk factors." "The way caution zone jobs are attempted to be quantified is helpful. But I believe it is dangerous to assume that a level of exposure that is defined as safe (i.e. does not meet the definition of a caution zone job) is safe for all individuals that may work that job. Conversely, an individual may be able to work indefinitely at a caution zone job without injury. The concept of ergonomics requires fitting the job to the individual; the regulation doesn't seem to allow this in all areas."	Employers have rightly asked that they be able to tell clearly whether they are covered by the rule or not. The caution zone criteria and the hazard descriptions in Appendix B would be incomplete and excessively vague without specific language allowing a relatively objective assessment to be made. As indicated by other comments, the risk factors are clearly defined. It is an error to assume that exposure below the hazard levels defined by the rule is "safe" (just as it is a mistake to assume that exposure to a chemical is safe for all individuals simply because it is below the permissible exposure limit). As required by law, this rule "most adequately assures, to the extent feasible" that no employee will suffer harm, but it does not completely assure this. Employers may choose to address risk factors beyond those described in the rule, in order to address WMSD hazards in jobs that fall outside the limits of the rule. But they are not required by this rule to do so.
7.28	**Rule is "one-size-fits all"** "Taking a blanket, one-size fits all approach to this complex issue will likely prove ineffective and costly for most employers." "The proposed rules establish "caution zone" and physical risk hazard" limits that propose that is "one size fits all." These limits apply equally to 20 year old men and 65 year old women. There is irrefutable data showing that the physical abilities of most 20 year old men are greater than most 65 year old women. Thus, these limits are either unnecessarily restrictive for most 20 year old men, or inadequate to protect most 65 year old women for musculoskeletal injuries. For this reason alone, these rules should not be adopted but must be completely re-written to appropriately address this fundamental fact." "It appears all trades and employees of all ages will be grouped together."	L&I received comments from many people who prefer a specific set of requirements that provide maximum clarity and many others who prefer flexible requirements. The rule provides a reasonable balance to accommodate multiple needs. The rule is specific with regard to the criteria for caution zone jobs and hazards so that employers are able to determine easily and definitively whether they are covered and when they have achieved compliance. The rule is flexible with regard to methods for job analysis and the choice of controls. L&I does not believe this is a "one size fits all" rule. The department has determined that it would not be appropriate to distinguish by gender, age or other "protected group" category in defining safety and health requirements. The WISHAct requires L&I to establish standards so that "no employee will suffer material impairment of health or functional capacity." The rule requires hazard control criteria intended to do this. However, employers have the flexibility to choose methods of control which ensure that every individual, no

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	"This seems to be another one-size-fits-all rule that we have learned in the past doesn't work effectively. People vary; men, women, large, small, tall, short, etc., etc. I have two office chairs that my bookkeeper and dispatcher use. One is a very expensive ergonomically correct chair, theoretically; the other, a very cheap office chair. Guess which one gets used, because it's more comfortable, the cheap chair."	matter their size or shape, is protected. A workstation set up for one worker might not be right for another. A "one size fits all" rule would not take this into account, but this rule does.
7.30	**Appendix B requirements inappropriate** "WAC 296-62-05174 Appendix B With respect to the neck and back bending. Do these requirements apply to persons who are sitting as well as standing? If the neck angle were applied to an office worker, we would probably have no office workers! Are there useable neck braces that could be support the neck comfortably and be use throughout the persons career? It this what was intended? If a person is seated does the back angle apply? It would seem to us that there is much less strain on a back while seated, even if there is the requirement to lean forward in the operators seat." (same author below) "WAC 296-62-05174 Appendix B With respect to arms wrists and hands, gripping an object more than 6 lbs. Per hand. We request information as to how these grip and angle requirements would apply to a steering wheel. Drivers everywhere will probably exceed the angle or pressure requirements at some time during their shifts. However, drivers also have the opportunity to constantly change the positions of their hands to vary the angles and pressures. We would request you add language clarifying this section, specifically that it doesn't apply to vehicle drivers." "The appendix lists many time restrictions for hazardous activities, but there is no guidance for how employers should measure these time periods." … "Are employers required to time the duration of each hand movement used in picking or the period over which many hand movements are taken?"	The requirements for awkward postures of the neck and back apply to persons who are sitting as well as standing. The final rule clarifies that working with the neck bent means "without support and without the ability to vary posture." This will greatly reduce the number of office workers whose jobs meet the caution zone criteria. The rule does not require neck braces and the department does not consider them to be personal protective equipment. The final rule clarifies that high hand force means gripping an "unsupported object weighing 10 or more pounds." It also means "gripping with a force of 10 or more pounds," which is comparable to the force used to clamp a light-duty automobile jumper cable. These changes should make it clear that while the rule does apply to drivers, most drivers will not exceed the caution zone criteria for high hand force. For purposes of simplicity, the caution zone job criteria address single risk factors. The Appendix B hazard definitions, however, address combinations of risk factors. Also, for employers choosing the general performance approach the definition of WMSD hazard includes risk factors in combination. The final rule clarifies that duration refers to the total amount of time per day employees are exposed to the risk factor, not how long they spend performing the work activity that includes the risk factor. Also see the CES narrative for a more detailed discussion of whole body vibration.
7.40	**Employee participation requirement** "For the agricultural industry, most employers are not required to have safety committees. Instead, monthly foreman-crew meetings are required. Under your proposal, how would agricultural employees be involved in participation in analyzing "caution zone jobs" and selecting abatement measures? We can only assume agricultural workers will not be involved in these activities."	In agriculture (as in construction, logging, and the smallest employers generally), WISHA does not require safety committees. But the ergonomics rule requires the involvement of employees, not simply of safety committees. WAC 296-62-05140(1) states that the employer must provide for and encourage employee participation in several activities, whether there is a safety committee or not. The requirement to share information in WAC 296-62-05140(2) includes a requirement to do so at safety meetings where no safety committee is required. And the

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		requirement in WAC 296-62-05140(3) to include employees in a review of the effectiveness of ergonomic activities requires such employee involvement whether or not a safety committee exists.
7.50	**Rule too complicated to follow.** "If adopted, we'll become entwined in disputes over whether a job involves an "awkward posture" as we try to determine the actual angle of necks, backs and wrists and actual length of time a worker is in an awkward position. The criteria for "heavy, frequent or awkward lifting" is also confusing. The five-step process may be easy for an ergonomist to understand and apply, but is sure to confuse most employers and workers. The calculations and criteria set forth to analyze, and calculate weights, distances from the body, number of lifts, with adjustments and modifiers for twisting, weights and number of lifts at varying heights in relation to body postures are complicated and difficult to grasp."	The rule has been designed to be as simple and clear as possible. In some cases, professional assistance may be needed. However, most employers relying on the specific performance approach described in Appendix B will be able to complete the hazard assessment without professional assistance. The step-by-step approach in the appendix has been developed and reviewed by ergonomists and non-ergonomists within the department in order to balance technical considerations with clarity. The language has been further refined in the final rule in order to provide greater clarity.
7.60	**Changes in technology** Technology is changing. Changes we made to a job today may be influenced by technology changes happen tomorrow.	Providing workers with safe work condition is a continuous requirement and also a continuous effort by responsible employers. When a business decides to change work technologies and work organization, it is important to consider safety and ergonomics issues while doing the planning. No employers will likely be satisfied to introduce new technologies to harm their employees' health.
8	L&I should wait for OSHA/NAS/NIOSH	
8.01	**Relationship to OSHA Rule** "OSHA has a pending ergonomics rule issued just one week after the Labor and Industries' rule. Oddly, your department claimed it had to proceed because it could not count on OSHA to act. As an employer, we now face the prospect of having to conform to conflicting standards on ergonomics." "As the federal government has not yet ratified OSHA standards for ergonomics, and as Washington standards must meet or exceed federal standards, it appears we are jumping the gun by proposing to initiate a standard without a federal guideline to use for comparison." "Why are you going ahead with these rules when the OSHA has said to wait and see what we come out with first and then act on that?"	Although WISHA standards must be "at least as effective as" federal OSHA standards, employers within the state of Washington's jurisdiction have to comply with the requirements of WISHA, not OSHA. The alternative of waiting for OSHA was rejected for two reasons. First, Washington has the opportunity to fashion a rule that reflects the input of Washington State employers and employees and takes into account specific features of the state's worker compensation system, safety and health system, and industry demographics. Washington has previously used the authority delegated by Congress and provided by the Washington Legislature to develop creative state approaches to occupational safety and health rules that are tailored for Washington workplaces. Second, waiting for OSHA is unpredictable, in spite of the current federal proposal. OSHA rules often take many years to complete. This history suggests that a final ergonomics rule may be years away. Waiting would mean more Washington workers will suffer painful, disabling WMSDs that could be prevented. L&I is not aware of any direction or suggestion from OSHA that the State of Washington should wait and see.

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		See the CES narrative for a more detailed discussion.
8.01	"The federal OSHA version of the ergonomics standard will likely be final a few months after the Washington State standard is in effect. Washington State will have to rewrite their version to meet the guidelines of the federal OSHA version as required by law. This means that Washington employers and employees will have to retool and reeducate the federal OSHA version at a significant cost to the employer." "If federal OSHA's proposed ergonomic standard is promulgated, which standard would have precedence? Quite possibly an employer would have to comply with the "risk factor" based approach as state minimum requirement, and also meet the "incident" based approach of the federal standard. This would not be in the best interest of the state or businesses operating within the state of Washington."	Employers subject to WISHA jurisdiction are only required to follow the state requirements (which must be "at least as effective as," not identical to, the federal requirements). Based on the federal proposal, L&I believes that the WISHA rule would meet the "at least as effective as" test without further change. Other WISHA standards that differ in approach from federal standards have been accepted by OSHA (for example, the firm 10-foot "trigger height" in Washington's fall protection in construction rule has been recognized as being "at least as effective as" the 6-foot trigger height used in the federal rule). It will not automatically be necessary to rewrite the WISHA rule, and even if there are modifications necessary they would be likely to be modest ones. And all of this is based on the uncertain assumption that OSHA will in fact adopt a final rule in the coming months. No employer doing business only in WISHA jurisdiction would have to comply with more than one rule.
8.01	"We also believe L&I should withdraw adoption of your proposed rule, and increase the educational efforts as well as conduct pilot study of the draft rule to see if it is really effective, and will not conflict with the federal rule." "Federal OSHA has elected to <u>not</u> include construction as an affected industry under their proposed rule. OSHA's intent is to write a separate rule that will apply to or be more conducive to the construction environment. Apparently OSHA's management is of the opinion that different industries will require different guidelines and that one rule cannot be effectively applied to all industries." "I would urge you to do some kind of pilot program to establish whether these rules will indeed get the effect that is desired. They are significantly more stringent than the federal OSHA rules. I am also concerned about that gravely."	No existing federal rule or statute specifically regulates worker exposure to risk factors associated with an increased incidence of WMSDs. We are not certain what form a federal rule would take if adopted, since federal OSHA is currently evaluating comments on its own proposed rule. However, we believe that the WISHA rule will be "as effective as" the federal proposed rule in protecting workers from the risk of WMSDs, particularly since the WISHA rule is based on preventing injuries before they occur. The WISHA rule also incorporates a flexible approach that focuses on the level of risk and can be applied to any industry. A number of features, such as portable education and employer choice of job analysis methods, make this rule suitable for construction as well as other industries. See the CES narrative for a more detailed discussion.
8.05	**L&I should wait for NAS** "I hope that you will reconsider implementation of these rules until the National Academy of Science completes their study and findings are confirmed to help reduce ergonomic injuries."	NIOSH has reviewed the scientific basis for the relationship between risk factors such as those in the rule and WMSDs. The NAS has done a previous review. L&I's research staff have done their own review of the range of literature and documentation. The available evidence is compelling, and the department has based on the rule on the best available evidence. See the CES narrative for a more detailed discussion.

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8.06	**L&I should wait for NIOSH** "Until such time that NIOSH completes their development of a shipyard ergonomic standard, it is our hope that WISHA takes the approach proposed by OSHA, to exempt shipyards from their general industry ergonomic standard." "We strongly urge your department to defer any new ergonomic regulations on the shipyard and maritime industry until the OSHA sponsored NIOSH study with the SCA is completed. It is imperative that any new state ergonomic regulations take into account the unique ergonomic issues which exist in the construction and repair of ships in the maritime industry."	The relationship of the risk factors addressed by the rule to WMSDs is not unique to any one industry or group of industries. The rule is hazard-specific, not industry-specific. However, in recognition of the fact that all industries are not the same, the rule has been designed with enough flexibility that employers in all industry sectors will be able to comply. To the extent that NIOSH identifies feasible control measures in relation to shipyards, employers will be able to use those control measures to comply with the requirements of the rule. The final rule does take into account the relationship between the rule and employment hours, and it makes it clear that activities outside an employer's control (such as the way a ship was loaded at its point of origin) are not subject to the rule.
8.10	**L&I should modify any rule adopted to have the same definitions, terminology, and scope of any OSHA rule that is adopted.** "Language that would modify the state standard if and when it is passed, so that the terminology, definitions and scope of an ergonomics regulation is consistent with, and substantially the same as the endeavors or mandates of the federal occupational Safety and Health Administration (OSHA)."	At this point, discussions of tailoring the WISHA rule to the OSHA rule when it is adopted are premature, since there is no OSHA rule and it is not clear what features of the proposed OSHA rule would be in a final rule.
8.11	**Combined Comments on OSHA & WISHA** "While the extension is appreciated, we find that we still cannot meet the deadline imposed for several reasons: • Federal OSHA's proposed rules also require comment and it would seem more prudent to address both rules in one comment document. The deadline for the response to OSHA is March 2, 2000. Because of this I feel that an extension until March 31, 2000 should be implemented and request that this be considered."	The federal and state rules take different approaches, making the suggestion that one comment document should be used to address both a questionable one. In any case, the exhaustive record before the department provides a range of issues and indicates that members of the public were in fact able to comment. Unlike federal OSHA, L&I is subject to a legislative requirement to complete rulemaking within 180 days of the publication of the proposed rule in the Washington State Register, which made it unrealistic to extend the comment period further and still ensure that comments received the consideration that they deserved.
9.00	**Grandfather Clause/Safe Harbor/Good Faith Efforts**	
9.01	**Grandfather Clause** "The proposed standard does not provide relief to employers with effective injury prevention/reduction programs already in place." "Provide better safe harbor protections for employers with existing ergonomics programs that are acting in good faith. To determine if our existing program will be as effective as what the department's new rules require is problematic. The rule does not define how much reduction in injury incidence is enough, much less how job modification or worksite	The rule provides that existing programs that are providing appropriate employee education and involvement and that are identifying and eliminating hazards such as those described by the rule will be in compliance. Nursing homes working on zero-lift programs in cooperation with the department may assume that these activities are "safe harbors" and will at least partially bring them into compliance with the rule. The rule requires reduction of hazards that can cause injuries, and compliance will

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	redesign would be deemed sufficient when injuries still occur." "An employer's ergonomics program [should be] determined to be sufficient provided that the employer has made a reasonable attempt to identify ergonomic hazards and is making a reasonable attempt to correct them." [We oppose]"The exclusion of a "good faith" clause for those companies that make a solid effort to identify, prioritize, and correct hazards that occur in the workplace." "This standard doesn't take into account any of the injury or illness rates associated with repetitive motion, and so, again, there it is across the board whether you have written programs in place, whether you have a return-to-work program in place, whether you consistently help your employees through the workers' compensation process, whether you are in contact with the physician, with the physical therapist, the occupational therapist." "I propose that you should exempt employers with a proven safe workplace based on experience factors. All employers with an experience of .8 or less should be exempt from the standard because sound safety practices are already in place according to L&I's own criteria." "Employers who have an ergonomic program in place, with low injury rates and job tasks that are extensively varied or are infrequent, should be exempt from the proposed rule requirements." "The proposed rule <u>does not</u> allow history to be used to determine if "caution zones jobs" exist. If an employer does not have a history of WMSD injuries, why should they be subjected to the cost of implementing a program that is not needed? When the hearing officer was asked why history could not be used, the following example was given to justify his "no" answer: "It would be incorrect to conclude that a roofing company would not need fall protection if it has no history of people falling off of the roof". The hearing officer's reasoning is flawed. Falling off a roof is an accident and not a planned, repetitive action. Therefore, fall protection is always required for this non-planned event. But a repetitive action on the jobsite is planned, and if there is no history of WMSDs, then there is no need for a program."	not based on the success of a particular employer in reducing the number of reported claims or achieving a low experience factor. "Good faith" is a factor in determining an employer's accountability for a violation. It is not, however, a factor in determining whether a hazard exists that must be corrected. The rule is based on preventing injuries, not managing claims, so it does not address issues related to the claims management process. The rule is based on the fact that where employees are exposed to hazards they are at risk for injuries, regardless of whether other employees at the same workplace have ever previously been injured. This is true whether the hazard is working unprotected at heights, working exposed to asbestos, or working exposed to the risk factors covered by this rule. In any case, the notion that identified hazards should be eliminated in order to prevent the injuries and illnesses that can result from them recognizes the statistical reality that the difference between employers – especially smaller employers – who have had particular types of injuries and those who do not is sometimes a matter of chance. See the CES narrative for a more detailed discussion.

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	"These ergonomic rules are a slap in the face to long term care providers who have been proactive in creating zero lift and working cooperatively with L&I to affect changes in our workplaces."	
9.01	"We also suggest revising the safe harbor provisions found at WAC 296-62-05110 as follows: *"Employers may continue to use effective alternative methods established before this rule's adoption date. If used, the employer must be able to demonstrate that the alternative methods, taken as a whole, are ~~as~~ effective ~~as the requirements of this rule~~ in reducing the WMSD hazards of each job. ~~And providing for employee education, training and participation."~~* The revised safe harbor provision would allow employers to use their own ergonomic programs that were established before the rule, provided the company can demonstrate that the program is effective in reducing WMSDs. This provision would recognize that employers who have taken the initiative to develop and implement successful ergonomic injury prevention programs may well manage ergonomic hazards better than a "one size fits all" regulatory program. It would avoid, however, the employer having to attempt to quantify whether his program would be as effective as the program adopted by the Department of Labor."	The elements of employee participation, education and training are critical elements of effective ergonomics activities. L&I considered and rejected a more limited requirement for pre-existing programs. By stating that an acceptable alternative program must reduce hazards as effectively "as the requirements of the rule" means that the employer must establish specific hazard criteria and reduce exposure below these levels or to the degree feasible. Without this clarity neither L&I nor any employer would have a way of knowing whether an alternative program was in compliance.
9.01	"Similar general occupational health standards like hearing conservation have both programmatic exemptions and "baseline" conditions based on the workplace environment. This rule has some exemptions based on "Caution Zone" job determination, but does not go far enough in allowing an overall employer's past record or performance versus ergonomic-related injuries to be considered for programmatic exemption."	An employer who has educated his or her employees and who has effectively identified the risk factors addressed in the rule and has reduced the exposure to those risk factors will be in compliance with the rule without the need for an exemption. The rule makes clear that employers do not need to start from the beginning and repeat job hazard analyses that have already been completed as part of an effective program. The rule does not, however, allow an individual employer to rely on injury rates to assess the success of a program (nor does the hearing conservation standard, which requires controls based on documented levels of exposure, not injury rates). Employers must focus on prevention of injuries and illnesses by reducing exposure to the hazards that cause them.
9.02	**How can an employer determine if an existing program will be at least as effective?** "The same questions can be asked of the department's "safe harbor" provision for employers with existing ergonomic programs. How will the department determine the "effectiveness" of a program, and by whose	Although the employer will make the initial assessment of effectiveness, that assessment is subject to review by L&I in the event of an inspection. If we disagree with the assessment, we have the burden of proof in documenting a violation of the standard. If we issue a citation in the belief that we have met that burden, the employer can appeal and the Board of Industrial Insurance Appeals and

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	judgement – the department's or the employer's?"	the courts will ultimately determine the issue. All parties will be relying upon the language of the grandfather clause found in the rule, which provides the elements that must be addressed.
9.02	"I would like to see the research that has been done that shows that this proposed rule is effective. All requests for this research have been rebuffed. If such research exists, it should be made available for all concerned citizens groups to study in order to enable them to prepare a rebuttal. If it doesn't exist, then the burden of proof placed on the employer [to have an existing program that is at least as effective as the rule] is an impossible task." "How does the department define the term "feasible" – financial, economical, or technical? Furthermore, is it the employer or the department who determines what is feasible? The same questions can be asked of the department's "safe harbor" provision for employers with existing ergonomic programs." "First of all, what does "effective" mean. But more importantly, how can an employer ever know if its own program is as effective as the requirements of the proposed rule unless it has first implemented the rule for comparison purposes? No employer will be able to satisfy this burden and the "grandfather clause" becomes meaningless."	L&I proved a summary of the evidence upon which the rulemaking was based at the time the proposed rule was published. The department has not refused any requests for additional information about the science or research related to ergonomics. The record includes considerable documentation of the relationship between the risk factors in the rule and WMSDs. As a result, it is clear that controlling those risk factors will reduce the WMSDs. The final rule includes clear language indicating that feasibility refers to both economic and technological feasibility. See the CES narrative for a more detailed discussion. In determining whether an existing program is effective in reducing hazards, the employer does not need to implement the rule for comparison purposes. It is sufficient to review the requirements of the rule to determine whether the employer's existing program focuses on hazard identification and correction (rather than relying solely on injury-based triggers) and whether it provides a level of protection basically equivalent to that in the rule. The department has considered and rejected the approach that would evaluate an individual employer's program based on injury and illness claims. To eliminate a requirement for effectiveness would require the department to accept all pre-existing "programs" as sufficient to comply with the rule, even if they were inadequate, incomplete, or unenforced. This is an unreasonable expectation for any "grandfather clause."
9.05	**Safe Harbor Clause** "Proposal Should at Minimum Include A "Safe Harbor" Provision Modeled On California's Ergonomics Rule, Which Would Partially Address Constitutional Difficulties And Would Satisfy The "Least Burdensome Alternative" Requirement Of The Washington Administrative Procedures Act."	L&I believes this comment refers to the provision in the California rule that measures taken by an employer will be in compliance unless it is shown that a measure not taken is substantially certain to cause a greater reduction in injuries and would not impose additional unreasonable costs. L&I has decided to reject this suggestion because this would establish an unreasonably high and unusual burden of proof on the regulatory agency and also because the rule is based on the requirement to reduce exposure to hazards, not to reduce injuries. The rule does provide an alternate "safe harbor" for employer programs that are effective in reducing exposure to hazards.
10.00	Need to exempt … construction/agriculture/maritime/etc.	
10.01	**Exempt Construction** "In this case we feel that Labor and Industries should follow the lead of	The risks in construction are more severe than that in many other industries. Workers in construction are exposed to harm that the final rule can reduce or

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	the federal government and adopt their standards as they apply to general industry and when OSHA comes out with a standard for construction then adopt the federal standard." "Federal OSHA has also published a proposed ergonomics rule and has exempted construction. This should be a clear indication to WISHA that construction has many inherent differences from fixed industry. These differences are complex and demand detailed study." "OSHA has exempted construction from the federal rule; how can a conflict between state and federal rules be "less burdensome?" And for whom?" "There was a special request made by the CAC, the Construction Advisory Committee, to develop a special Washington ergo rule just for construction, as with OSHA. Judging from the proposed WISHA ergo rule, this has obviously been ignored."	eliminate. The risk-factor based approach in the state rule can work in construction as well as in general industry (it was in fact developed based in part on advice from representatives of the construction industry). There is no reason to fail to address the risks in construction as part of the rule, or to fail to provide equal protection to construction workers. The Construction Advisory Committee requested a separate subcommittee to advise the department during the rule development process. That committee was created, and its deliberations were fully considered in designing the final product in addition to the broader-based Ergonomics Rulemaking Advisory Committee. While some members of that committee expressed a desire for a separate standard, the CAC never made the special request described here. In fact, many active participants in the CAC testified at the public hearings in support of the proposed rule.
10.03	**Exempt Agriculture** "Why should agriculture be exempted from these types of regulations? 1) Agricultural jobs are seasonal in nature with jobs that have a wide range of movement. 2) American farmers are the most productive, safest producers of food in the world. Our industry should only be exposed to regulations that are imposed on all food suppliers, specifically imported crops (e.g. pears, apples, cherries from Argentina, Chile, Mexico, China, and others). We should not have to meet standards that our world competitors do not. If we are required to do so, the food you buy at the market will increasingly be produced by third world producers with wages of $2.00 per day and little if any regulatory costs. 3) Agriculture is taking a pro-active approach to ergonomic safety. The Washington Growers League has coordinated a study of ergonomics in packinghouses through the University of Washington Department of Environmental Health Field Study Group. Not yet released, this study is anticipated by several packers to assist in avoiding ergonomic related injuries. 4) Agriculture has a relatively low level of musculoskeletal related injuries. Bottom line we don't need more burdensome regulations and one more big brother agency telling us how to do our business. There are hard fast	The rule is based on well-defined risk factors that can be applied across industries and it provides equal protection to workers based on the risks to which they are exposed, rather than the industries in which they work. There is no reason to believe that exposure to these risk factors in agriculture would not result in the same sort of injuries as in other industries. In addition, feasible control measures do exist for many agricultural activities, and the principles of controlling risks can be adapted to most remaining environments. Where controls are truly not feasible, the rule does not require that they be implemented. Equal protection of workers in agriculture is a well-established public policy goal of the department. L&I is not prepared to accept a worldwide "lowest common denominator" standard of regulation that would hold the safety requirements applied to workers in Washington agriculture down to the lowest level in an underdeveloped nation.

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	economic advantages to avoiding ergonomic injuries."	
10.03	I feel the risk of musculoskeletal injury is lower in seasonal or temporary workplaces, so why should we be required to make the same changes that year-round workplaces make?	Activities associated with agriculture and other types of seasonal work have significant levels of musculoskeletal injuries. Fruit and vegetable packing ranks in the top ten in Washington state in terms of number of upper extremity musculoskeletal injury claims. Approximately 3% or more of agricultural workers receive lost-time compensation each year due to sprains/strains and overexertions. Additionally, it has been found that newer or short-time workers may be at an increased risk of injury when compared to those on the job for over 8 months (Gardner et al., 1999).
10.04	**Exempt Trucking** " I believe that, "repeating the same motion with the neck, shoulders, elbows, wrists or hands with little or no variation every few seconds for more than two hours total per day," should not apply to truck driving."	To the extent the risk factor exists within trucking, there is no reason to believe its effect on a truck driver is different from that experienced by other workers in other contexts.
10.05	**Exempt waste management** "Federal OSHA acknowledged in the preamble (64 Fed.Reg. 65782) that for garbage collection, forceful exertions comprise a significant amount of the employees' work time. Lift loads weigh an average of forty to fifty pounds. Employers in the industry cannot eliminate these activities and remain in the business of waste management."	L&I agrees that these risks are present and therefore believes that the waste management industry should be covered by the rule. The rule requires employers in this industry as in others to address the hazards only to the extent that controls are (or become) feasible. And many controls do exist that can at least reduce lifting and other risk factors within waste management. There is no basis to exempt the waste management industry from the requirements of the rule.
10.06	**Telecommunications and Utility Industry** What process did the Washington Labor and Industries Department use during the development stages of the standard to determine that it was feasible and practical to reduce risk factors to acceptable limits within "caution zone jobs" within the telecommunications and utility industry.	It might be true that telecommunications and utility companies may have more challenges to reduce risk factors as workers often work in 'other' people's worksites. However, the feasibility and practicality problems can still be solved. For example, one major risk factor in this industry is the awkward working postures in, e.g. installing meters, and pipe lines. Work process improvements could easily solve the poor posture problems. Installing a meter before digging a trench could solve the overhead work posture problem which would otherwise occur when installing a meter while standing in the trench, and careful planning and cutting pipes may reduce the duration of kneeing which might otherwise occur if the fitting is done in a trench. Another common risk factor is the hand-arm vibration when using jack hammers. One solution to this is to use mobile machines to do the job as much as possible. If jack hammers have to be used, select tools with lower vibration levels and frequently rotating between operators could be easily performed to reduce the risk and these practices have been commonly used in many utility companies.
10.08	**Exempt self-insured businesses** "We recognize the tremendous cost to the state in Workers' Compensation claims from "WMSD." We recognize the risk management needs in the state fund program to provide some loss control and impetus to improve	The statutory purpose of WISHA is "to assure, insofar as may reasonably be possible, safe and healthful working conditions for every man and woman working in the state of Washington." There were more than 80,000 compensable WMSDs among self-insured employers from 1990-1998. The annual incidence rate is 16.4

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	this safety record premium, not claims, are the financial liability to the participants of the state fund. However, that is not the case with a self-insurer such as the City of Spokane. We do understand the risk management relationship. Cost and production issues do motivate us. *We suggest that self-insurers not be included in these rules."*	per 1000 FTEs. There is no basis for exempting self-insured employers from the rule. See the CES narrative for a more detailed discussion.
10.09	**Exempt emergency operations and businesses without factory production tasks** "Our employees respond to emergencies, when necessary, and work diligently for unspecified hours in order to accomplish this task. When they are not responding to emergencies, their work is varied and is not similar to the continuous movements found in a factory or production line. Therefore, we would request an exemption for emergency situations, as well as, for businesses without factory, production line, or work tasks that are not performed on a daily or weekly basis."	It is not necessary that work be performed on a daily or weekly basis in order for the risk of injury to be present. The final rule does make some adjustments to reflect this and similar concerns, but it does not provide an exemption for "emergency" tasks that are in fact recurring and foreseeable. The rule as proposed already excluded emergencies that truly could not be anticipated.
11	Multi-Employer/Deliveries/Transient Worksites	
11.01	**Responsibility for workers at someone else's worksite** Who is responsible needs to be defined. Transient or temporary workers may work at a different site every day.	Employer responsibility for compliance with the rule is governed by two considerations. The first is whether there are caution zone jobs, as identified by the employer's reasonable assessment of the typical work of his or her employees. The second is whether the employer creates or controls the workplace, the hazards, or the means of correcting them. This latter consideration is not unique to this rule, but follows longstanding policies and case law. See the CES narrative for a more detailed discussion of job analysis and employer responsibility for transient or temporary workforces.
11.01	We deliver or provide goods/services and have no control over our employees work-sites or the risk factors to which they are exposed. "employers are not responsible for mitigating hazards for delivery workers at customer's locations"	In assessing such situations, as in other multi-employer worksite situations, L&I would consider the employer responsible for compliance with the rule based on reasonably anticipated hazards and to the degree he or she controlled the worksite. See the CES narrative for a more detailed discussion
11.02	**Where employees constantly move to different jobs.** "Maintenance of the "caution zone" jobs and related activities such as training and evaluation would be a tremendous undertaking in our organization as employees constantly move from position to position, department to department."	As a general principle, job safety and health training (just like other training) must apply to the employee's actual duties and may require updating or refreshing if the employee takes on new duties. An employee who takes on a new assignment must be trained in performing that assignment – part of that training is the way to perform the assignment *safely*.
11.03	**The non-fixed work-site/jobs and unstable workforce makes it difficult to identify and analyze "caution zone" jobs.**	Analysis of variable jobs is similar to the analysis of fixed jobs. Whereas fixed jobs have one (or a few) tasks, variable jobs typically have a larger number of tasks that must be evaluated. The risk factors present will likely vary in intensity between the different tasks, and the evaluator will have to add up the total time contribution, or

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		frequency contribution to determine whether the limits listed in the caution zone table, or in Appendix B, can be reasonably expected to be exceeded. Extremely precise measurements of task times or frequencies are not required. Reasonable accuracy, and clear, sensible, means of determining results, will be the primary factor determining the acceptability of the analysis. Typical work activities are those that are regular and foreseeable and occur more than one day per week, and more frequently than one week per year. L&I's intent is to limit caution zone jobs to those that expose employees to risk factors more than very infrequently. However, when applying this notion of frequency to highly variable jobs it is important to distinguish between work activities and tasks. For example, consider a job that involves ten different tasks, each one of which is done for less than a day each week and each one of which involves exposure to high hand force. For this job, although each task is infrequent, the work activities involving the risk of high hand force do occur frequently and must be counted in the job analysis. See the CES narrative for a more detailed discussion.
11.04	**Stute** "I feel the rule is unfair to larger businesses. The multi-employer liability rule or the Stute decision will stand under this standard according to Dr. Silverstein, and that's going to require the large businesses to bring smaller subcontractors into compliance prior to their start dates, which is going to increase costs to the larger businesses and that needs to be addressed in the economic impact statement. "	The department has determined that general contractors and upper-tier contractors will not be held accountable for subcontractor compliance with the rule until the implementation period has been completed and the rule is in effect for all businesses. Whether the general contractor or the subcontractor is covered by the rule, no *Stute* violations will be issued under the ergonomics rule until the phase-in is complete.
12	**Education, training and awareness requirements**	
12.01	**Training must be understood** " Training. It would be helpful if the rule were to state that the training be effective in practice and that the employees at least demonstrate that they understand and can use the training."	Compliance with this rule, as with any safety and health rule, already requires that an employer's efforts be "effective in practice." Training that cannot be understood is not effective and does not meet the requirements of the rule.
12.02	**Supervisors and Managers** "At the very least, I would like to see ergonomic education required for managers and supervisors who have full time computer operators on their staff. Part of the ergonomics education should focus on the critical importance of "recovery breaks" being built into the daily schedule to prevent such long periods of sitting."	Supervisors are required to receive ergonomics awareness education if any of their employees who use computers perform intensive keying or have any of the other physical risk factor present in their work activities for a duration that places them in a caution zone job. Recovery breaks can be an important control measure for computer related hazards, and this suggestion will be considered when the Ergonomics Toolbox group develops model awareness education materials.

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12.03	**Employee Rights** I would say that the employer must inform workers that the employer cannot discriminate against them or sanction them for reporting"	Protection against discrimination for exercising rights under WISHA is already part of other workplace regulations and does not need to be addressed specifically by this rule. Reporting industrial insurance claims is addressed by workers' compensation law and is outside the scope of this rule.
12.05	**Training/Education should clearly be general** "The definition of training should clearly state that training is general training, and not industry specific."	The term 'education' was chosen for the awareness requirement to distinguish it from training, which *is* industry and job specific (and which is required by this rule to the extent that it is necessary to implement controls chosen by the employer to address any hazards). The awareness education is described in the rule and is fully portable; in addition, L&I will be providing model programs that can be used by employers to comply with the awareness education requirement.
12.06	**Education and training should be industry/job specific** "The education and training should be tailored to specific needs of different industries and job functions"	L&I will develop generic materials for the awareness education component of the rule, although these materials will be available in formats allowing employers may customize them to their industry or workplace. The job specific training will need to be tailored to the specific job functions in order to ensure that the selected control measures are implemented; however, it will be the employer's responsibility to ensure that employees receive this training.
12.06	**Portability of Awareness Education** "In regard to training, the regulations allow that new employees having had ergonomics training in the previous three years are not required to receive such training, but do not define the certification the department will expect in reviewing training. See proposed WAC § 296-62-05120" "Under para. 05120 the issue of worker training requires clarification. Within the construction industry, it is common for an individual to work for six of more employers per year. Enjoining an employer to rely on education provided by another employer is simply not feasible. Until union/trade/industry councils are implemented and document the extensive training indicated, satisfaction of this standard will have broad consequences on training expenses." "Maintenance of the "caution zone" jobs and related activities such as training and evaluation would be a tremendous undertaking in our organization as employees constantly move from position to position, department to department." " In section 296-62-05120, is ergonomics awareness education by "another employer or organization" acceptable only when performed by someone with whom the present employer has a contractual or other formal arrangement, or is education that happens to have been provided by a previous employer also satisfactory? If so, how would the present employer ever know that the previous employer had conducted an	L&I has changed the wording in subsection 05120 of the rule to allow awareness education to be more generic, rather than being tailored to the physical risk factors to which employees are exposed. This will make the training truly portable, so employers will not have to retrain employees more often than every three years. Documentation of training can be as simple as a card or certificate given to an employee showing that they have completed the training. Employers are not required by the rule to maintain records of training. Verification that employees have been trained can be obtained through employee interviews. The referenced subsection requires only that employers ensure that their employees receive awareness education at least once every three years; they are not required to rely on a previous employer's awareness education, but can do so if they choose. L&I is currently working on developing model education packages that can be implemented as is, or adapted by industry, trade and labor groups to provide to their members. This education can be made available in a number of formats, including paper-based or web-based training, so that individual employers can choose the appropriate training method according to their resources. L&I did not envision this as "extensive" training and this will become clear once the materials are generally available. The department considered extending the 30 calendar day requirement to 30 "working days," but concluded that the latter phrase would be both less clear and less protective.

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	adequate education program? If not (and I favor the narrower interpretation), this phrase should be clarified." " For example, most of my client's agricultural workers are seasonal. In addition, on any given day, my client has little or no control over which seasonal workers will actually be working. "Picker A" may work for my client for a few days and then work for someone else. Bouncing between employers may continue throughout the season. In addition, Picker A may or may not have worked in the State of Washington in the previous three years. It will be impossible for my client to determine whether or not Picker A has received "ergonomics awareness education" " WAC 296-62-OS120. Longshoremen are casual workers, they are dispatched from one employer to the next. Specific CZJs at each worksite will vary from employer to employer. Therefore, compliance with this section would require all longshoremen to be trained on the dangers of all possible CZJs even if they only take one job having a CZJ in a three year period. In Washington this would involve nearly 2000 individuals and have to cover the 60 ox so different types of jobs that we have available. We would hope that training on the ergonomic principles outlined in the rules "in general," rather than having to tailor them for "each specific" job would suffice for this training. The estimated costs of this general training are outlined above. Further, the rules require that the training be provided within 30 calendar days unless received in the last three years. This is controllable for our identified workforce, but is almost impossible for the unidentified workforce that is obtained from the state unemployment office. We request that the 30 calendar days be changed to 30 working days. It is further suggested that the rules be applied directly to the unemployment office so that all persons seeking a job not only in our industry, but in construction, masonry, etc. be given the basic training as a state requirement before even being dispatched. These casual laborers are probably at the most risk because of their unfamiliarity with the jobs being done."	L&I's WISHA jurisdiction is limited to employers; the department cannot require the Employment Security Department to provide training to job candidates on unemployment insurance.
12.07	**Awareness education before assessment makes no sense** "Education is required a year before the analyses are completed yet how can employees be trained when the hazards the job imposes are not identified?" "Contained in Part 2 is a requirement that employers institute an education program and then identify WMSD hazards. In my way of thinking, this is completely backwards. How can you educate someone about the hazards in their job, when you haven't even assessed the job to see if there are in	The intent of the awareness education is to provide generic information on the physical risk factors and potential for injury that may be present in caution zone jobs. The rule language has been changed to make the general nature of this education more apparent. Also, L&I is working to develop "model" awareness education materials that employers may more readily understand what is expected for this education. One of the main reasons for educating employees first is so that they can have meaningful involvement in the assessment phase of the ergonomics process. However, employers may want to tailor to tailor the education more to

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	fact any hazards present?"	their workplaces and the hazards in it for those employees who will not be involved in the later phases of the process. In order to accommodate this, the timeline for completing the education requirements of the rule has been extended to coincide with the timeline for completing the assessment requirements. More job specific training is only required if hazards are found during the assessment, and this of course should come after the assessment. Finally, the implementation schedule has been modified so that the hazard analysis and awareness education requirements will take effect at the same time.
12.08	**Make awareness annual, not every three years** "Ergonomics "awareness" training should be on an annual basis not every three years. Awareness training should also include the steps or method for reporting symptoms and injuries."	L&I believes that the three year requirement provides a good balance between the need to keep the workforce informed of hazards to which they may be exposed and the need for businesses to remain productive and keep training costs down.
12.09	**Specify content of training, detail on what would qualify for education** "Another concern relates to the employee awareness education as described in the rules. There is insufficient information about what kind of education qualifies. Will the employer be expected to offer an actual training session to affected employees or will simply providing those employees with printed material suffice?" " The education requirements are too vague: Define the educational requirements better. I suggest you include as detailed information on training as OSHA did on the forklift standard. Employees are required to be aware of ergonomics, and the risks of their job, but employers are required to identify each risk. The standard is not specific on the details of risk that must be trained."	The language on awareness education has been clarified. The method of providing awareness education is flexible in order to encourage employers to use the education materials and methods that best suit their industry, workforce and resources. As long as employees receive education containing the elements specified, and at the required times, then the employer will be in compliance, regardless of the method of training used. However, to assist employers in complying with this requirement, L&I is working with an Ergonomics Toolbox group to develop model awareness education materials. The awareness education requirement is a general requirement that is not intended to provide employees with the training they need to implement specific ergonomic controls safely. That training is required to the extent necessary in a particular situation; providing detailed training requirements would inappropriately subject employers and employees to a "one size fits all" rule.
12.10	**Additional requirements for awareness education.** "An obvious omission is the absence of a requirement for employees to report soft tissue pain as early as possible to the employer. Such reporting provides the opportunity for early intervention before the condition becomes severe." "While the initial symptoms of an MSD may be annoying, the chronic health effects from an untreated MSD can be debilitating. To encourage both employers and workers to take seriously the need to reduce and eliminate the risk factors that lead to MSDs, the training that is provided should include information on chronic health effects." " WAC 296-62-05122 – Ergonomic education elements: Employees should also be educated to understand that their behavior in terms of work habits, work technique, postures, proper use of technology, taking of	The rule focuses on prevention on injuries through the reduction and elimination of specific hazardous exposures. Symptom reporting is beyond the scope of such a rule. The requirements of the awareness education include information on the symptoms and consequences of WMSDs and the employer's reporting procedures. It also requires education on physical risk factors, which can include those inherent in the job as well those that are due to work habits of the individual. Work techniques, proper use of technology, and similar issues can be covered during the job specific training once hazards have been identified and controlled. After the job is determined as a caution zone job, the job will not only receive detailed analysis to determine whether the job is a hazard zone job, but also the

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	scheduled rest breaks, etc. has a significant impact on their risk for developing WMSDs. They should be informed of the need for them to take an active role in their own protection. That failure to follow appropriate work methods can negate other ergonomic interventions established to protect them." I see no difference why workers shouldn't be informed of the risk of their work related to potential musculoskeletal injury	worker(s) at this job will also receive training, which will include the potential risks at the job causing musculoskeletal disorders and ways to prevent them.
12.20	**Timeline for Awareness Education** "The requirements are out of sequence. How can education be required before a company analyzes its hazards?"	The ergonomics awareness education is a basic program to give employees the ability to assist the employer in identifying hazards. It is fully portable and does not need to be tailored to the employer's hazard analysis. Additional training, necessary to implement any controls, must of course be provided after the hazards have been analyzed and the controls developed.
12.20	**Training requirements are extensive** "Assuming the training session is required, this will then require additional use of an outside consultant since it is highly unlikely anyone on our staff will have sufficient expertise to meet the department's requirements" "It seems reasonable to me that the larger employers who have many more employees to train and many more job stations and work areas to assess and possibly modify should be given at least the same amount of time to comply with this ruling as smaller employers" " The general "canned" commercial ergonomics training modules may not be sufficient to cover the specific job training envisioned under these regulations. If tailored training were developed, it is estimated that we would probably have to focus in at least four major areas: 1. General Safety Training: This would be the module for 3 year continuing general ergonomic training: 2. Mechanics ergonomic training: 3. Specific equipment ergonomic training: and 4. Supervisory ergonomic training Curriculum and video development costs are estimated to be on the order of $120,000 (four courses and videos at $30,000 each). " " The proposed rule is so vague that we feel it will unjustly burden Interstate Distributor Company with increased expenses to become compliant with the proposed rule. Because of the many envisioned changes, to be in compliance, we will have to train each employee on each job they work. With many of our employees who work outside the state, the task of training each employee will be extremely time consuming,	L&I is in the process of developing train-the-trainer materials that will make it possible for anyone to provide the ergonomics awareness education to employees without the need for additional expertise, hiring an outside consultant, or development of video courses. Additionally, materials will be developed that will allow employees to go through on-line, interactive training programs with no need for an instructor. Job specific training will be considerably less comprehensive for most employers than assumed in the comments, especially for employees that have been involved in the identification of hazards and selection of controls. Employees must be trained to the degree necessary to implement the selected hazard controls. This training is essentially the same as most on-the-job training on job functions and how to perform the job safely, which many employers already provide when new equipment or processes are introduced.

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	virtually impossible, and very costly." " WAC 296-62-05122. Your definition of what "ergonomic awareness education" must include needs to be more definitive, particularly items #2 and #3. How is an employer to get information on all the different types of WMSDs available or that could possibly occur in his work place? In addition, how is an employer to identify all the possible the reduce them? As our employers do not have ergonomists on staff, this requirement leads to the conclusion that each employer will need to hire an ergonomics consultant to help identify these points. Were the costs of hiring a consultant addressed in your economic impact for the rule? If this is not the intent, then better guidance is needed on the extent of the identification and analysis to satisfy the intent of the rules." " Compliance with this Rule would require training approximately 2,000 registered and casual longshore persons. Currently the Pacific Maritime Association (PMA) is the training administrator for longshore personnel which are required to participate in (e.g., General Safety Training program). Payment to all these individuals, at an eight hour work day would cost in excess of $600,000 at first blush. These costs are for wages only, and do not include PMA administrative time and expenditures to set up the training or the time and expertise required to analyze all the caution zone jobs. These additional costs would increase our training costs substantially, and under the currently proposed Rule, would be incurred every three years. We believe the costs far outweigh the benefits when looking at the minimal costs we have incurred for ergonomic injuries over the last 3 years." "Training under these regulations would require that the individual be paid for one day (eight hours) work. This is an ILWU-PMA contract requirement. At a minimum, the wage cost of the training would be $600,000. This cost would be incurred every three years. If these students were trained over 100 classes, the instructor costs would be about $80,000, this does not count the classroom overhead costs."	
12.21	**The L&I Training requirements should mirror the OSHA proposed ergonomics rule requirements.** "Ergonomics Training, Including Information on Chronic Health Effects, Should be Required When An Employee is Initially Assigned to a Covered Job and Whenever New Hazards Are Identified or Existing Hazards are Increased. The Department's proposed rule requires employers to provide ergonomics awareness education within thirty calendar days of assignment to a "caution zone job." WAC	The L&I proposal provides flexibility in relation to the initial awareness education, not in relation to the specific training necessary to perform a job safely (which would need to be part of the employee's basic training in performing a new assignment). Although awareness education is necessary to help employees identify hazardous jobs it is not necessary that such education be provided before the first 30 days of duty in a job for which an employee has otherwise been fully trained (including training in the use of any control measures).

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	296-6205120. By contrast, OSHA's proposal requires training at the time of initial assignment. 29 CFR § 1910.927. In addition, OSHA's proposed standard requires ergonomics training when a problem job is identified, when new hazards are identified in a job, or when changes are made that may increase exposure to MSD hazards. 29 CFR § 1910.927. Providing training when workers axe initially assigned to a position or whenever a new or increased hazard emerges will best enable workers to protect themselves and avoid injury. Since OSHA's approach is consistent with the Department's "prevention based" strategy, the Department should adopt OSHA's provisions regarding the timing of training."	
12.25	**Hazard Analysis Training Requirements** "With respect to the workplace assessment, the rules give little guidance on how the assessment should actually be conducted. They do state that the person doing the assessment should know how to use the analysis method effectively, which assumes that the person will need to be well versed in what analysis methods are both available and appropriate. This means most likely a need for bringing in an outside consultant, which will be an additional cost to employers." " Additional training will be required for those performing Hazard Analysis to familiarize them with available tools, the regulation and Appendix B." " Section 3. Are there specific levels of required training? Will the WISHA have a role in certifying ergonomic analysts? Several of the ergonomic analysis techniques being proposed for use have aspects that require judgment on the part of the analyst. The analyst's knowledge and skills will have a direct bearing on the quality of the evaluation. WISHA should establish minimum qualifications for the analyst, and may even want to consider a certification process."	The person doing the assessment must know how to use the chosen assessment method(s) effectively, either through prior experience or through instruction and practice. This does not necessitate hiring an outside consultant. For example, one study found that supervisors were able to effectively use one of the alternate assessment methods after 30 to 40 minutes of training and practice, with results comparable to that of professional ergonomists (Dismukes, 1996). In addition, the methods described in Appendix B can be used without specialized expertise. L&I will be working with employer and employee groups during the phase-in to develop compliance guides and other technical assistance materials. If these groups determine that training on assessment methods would be useful for employers, then L&I will work with these groups to develop this training. L&I has determined that it is not necessary to established certification for people to do hazard analysis. The employers and employees most familiar with the jobs are often best able to analyze the jobs (and identify appropriate control measures).
12.30	**Training in WMSD causes and prevention requirement untenable because there's no sci-med consensus** "Specifically, proposed WAC § 296-62-05122 requires that employers provide training discussing the work related causes of MSDs and the manner in which the risk of WMSDs may be reduced. This appears an untenable requirement when there is no consensus with the scientific community regarding this information."	L&I believes that there is ample scientific evidence to support both the work-relatedness of MSDs and the efficacy of ergonomics in reducing the risks. The CES narrative provides a more detailed discussion.

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13	**Relationship to Other Requirements**	
13.01	**Before a final L&I ergonomics rule is adopted or implemented, it needs to be coordinated with municipal regulations.** "In many cases, municipal regulations make the task even more difficult. For example, many municipalities prohibit curbside service and require backyard collection which may require the worker to haul fully-loaded garbage cans (of the customers' choosing) up or down stairs, through tight spaces, or other difficult environments. Other municipalities institute refuse container pricing which encourages the use of large and/or very heavy containers."	This is addressed in the CES narrative's discussion on feasibility.
13.02	**Ergonomics proposal goes beyond ADA** "We are not able to evaluate at this time the issues impacting how we deal with ADA and "caution zone jobs."" "Therefore, the WISHA standard could require an employer to purchase an expensive ergonomic chair for an employee with a low back pain. Such an employee would not be considered to have a "disability" under the ADA, and would not be entitled to such an accommodation under that law." "A danger of the proposed ergonomics standard lies in the fact that instead of merely complementing the requirements of the ADA and FMLA, WISHA's proposal may supplant them and impose duties on employers beyond those contemplated by Congress. The end result is that the proposal removes from employers most of the decision–making responsibility, but not the financial liability."	The WISHA standard neither adds to nor interferes with the ADA. The rule also does not impose any requirements related to employees with low back pain or other symptoms. It is not injury based, but focuses on the elimination of the risk factors identified in the rule in order to prevent injuries from occurring in the first place.
13.03	**Existing DOT regulations on truck driving are adequate** "We have existing company policies and DOT regulations that inform and instruct our people on the hazards or potential hazards involved with their particular occupations. I believe that, "repeating the same motion with the neck, shoulders, elbows, wrists or hands with little or no variation every few seconds for more than two hours total per day," should not apply to truck driving." "There already exists DOT regulations which state that every three hours or 150 miles a driver must check his load for securement. A responsible individual would certainly use this time to stretch as he walks around his truck. Even a person who is not inclined to do so would still be out	To the extent the risk factors described in the ergonomics rule exist, they represent potential for injury regardless of the industry. The language quoted here comes from the caution zone, which describes the scope of the rule (not its requirements). Repeating the same motion as described by the rule for more than two hours total per day is not prohibited by the rule.

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	walking, changing his position and benefit by this stop. Must we make a further stipulation that this is based on ergonomics?"	
13.04	**Conflict with other requirements** Even though he decided he did not want to – he still felt nervous about the Hoyer lift, we went ahead with the – and put him on the Hoyer lift. The state surveyors came in. And I actually ended up getting a citation because that was a violation of resident rights. So I'm not just – I just don't have L&I, and I'm constantly looking at my employees. I also have DSHS and the state coming in. And I see this conflicting about where you're going to be with residents and with the staff. "The standard conflicts with the forklift standard, OSHA 29 CFR 1910.78(n)(4): *….if the load being carried obstructs forward view the driver shall be required to travel with the load trailing.* Doing so would cause the operator to excessively twist according to appendix B." "In construction type work where the actual work area is mandated by code design, regulatory safe work practices, and small crew sizes, most of the criteria listed to be in compliance with is not feasible. For instance; as an electrical utility company we are mandated under WAC 296-45 to stay a specified distance from energized conductors and equipment and use special insulated tools to maintain that distance. When working on an overhead power line the employees have to work under the lines with these hotsticks while standing in their climbing hooks on a pole. This position and the weight of the tools, including the time it takes to perform various job tasks cannot be changed. Under the proposed ergonomics rule we would have to change the equipment, design, position, weight, and the tools used to either eliminate or keep the exposure time below those identified in Appendix B. This is impossible due to design and code requirements and the types of equipment to bring electrical energy to the customer in a safe manner."	The rule requires that the hazards be reduced below hazardous levels or to the extent feasible. If the only otherwise feasible means of reducing the hazard would truly violate another law or regulation, then it is not feasible and the employer is not required to implement it.
14	**Existing Safety & Health requirements and the proposed rule**	
14.01	**Already covered by accident prevention standard** "I am opposed, however, as it is written to this standard, and if you don't remember anything else I said today, this is the reason why or one of the main reasons why. It's because we have already been steadfastly working	It is true that the Accident Prevention Program must be tailored to the hazards of the workplace, and in many workplaces that means that employers already have an obligation to address ergonomic hazards. However, this general obligation does not provide employers enough clarity about expectations and requirements. In

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	towards the supposed goal of this standard by assessing the hazards in our workplace and making the changes to reduce or eliminate those hazards which are already requirements in the present accident prevention standard as it is."	addition, employers have asked for clearer guidance about "how much is enough" that cannot be provided outside the context of specific rulemaking. See the CES narrative for a more detailed discussion.
14.01	**Continue to enforce existing regulations instead** "In the past, several inspectors and have enforced the hazard assessment regulation and used this for implementation and enforcement of safe work practices concerning ergonomic issues. Why does the department now change that position and try to implement a whole new set of rules and/or interpretations without proper legislation or definition."	Although employers do have obligations under existing rules, the application of those rules to ergonomics has been difficult, and they do not provide the specific guidance regarding risk factors and compliance provided by this rule. The business community has demanded rulemaking in the past rather than reliance on existing standards. This issue is discussed in more detail in the CES narrative.
14.03	**Grinder Safety** "The department had a person give testimony that a grinding wheel, when it breaks, is more dangerous than a 45, that a one-eighth steel plate guard is a better guard then a bulletproof vest. Because our solution to the ergonomic problem was give the guy something similar to a bulletproof vest so that he doesn't have to use a tool in a position that creates back problems. So what we've said is we're going to absolutely not use the guards. I will take the chance of going to jail before I will have my people suffer ergonomic harm. When safety equipment causes ergonomic problems, the department needs to aggressively change safety requirements to accommodate both the ergonomic and safety issues based off of actual data."	While coordination between rules is necessary (although in this case the department does not necessarily agree that a vest substitutes for a guard), this comment does not suggest a change to the ergonomics rule.
14.30	**Awareness education is simply training employees on how to file more claims** "This also seems to be another way to stimulate increased L&I claims. (I.E. lets educate them so they know what kinds of injuries to claim.)" "we are being forced to expend monies with no assurance that rate s will go down. In fact, with awareness training to employees alone, our claim frequency is likely to increase." "I believe that there will always be people that will take advantage of any system. But training for both the employer and employee so that both can understand better what is trying to be accomplished would lower the percentage of people (on all sides, DLI as well) ready to cheat the program."	The intent of the awareness education is to inform employees of hazards that they may encounter on their jobs and the symptoms of injury that they need to be aware of. Employees should also learn about the process for reporting hazards and symptoms of injury, but symptoms reported early on in the development of a WMSD can often be addressed through workplace changes without the need to file a claim. Not all companies that have done ergonomics awareness education see an increase in claims, and those that do typically see a decrease in severity of injury, and therefore a decrease in costs. For example, a large parcel package delivery company did experience a 64% increase in reports of injuries and illnesses following awareness education, but at the same time they had a 63% decrease in overall costs of injuries over this same period, primarily due to a 25% decrease in time loss (Nerhood & Rael, 1995).

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15	**Injury-Based Rule & Workers Comp Issues Generally**	
15.02	"The Department of Labor and Industries should target those businesses that are not making the necessary improvements rather than blanket the entire state with a program that discounts improvements that have already been made." "Focus on companies that have already shown a pattern of employee claims based on non-traumatic soft-tissue or repetitive motion injuries."	The rule is targeted at employers whose employees are exposed to a meaningful risk of a WMSD. L&I has considered and rejected the concept of an injury-based rule. See the CES narrative for a more detailed discussion
15.02	**Employers with a history of little or no WMSDs should not be burdened** "Our company has not had an ergonomic claim this past year, and we are considered a heavy industry, i.e. sawmill. Why does the department continue to try to find conflict with companies who have prevented ergonomic claims and find ways to improve without these burdensome type of rules?"	The rationale for a risk-factor based, rather than injury-based, rule is described in detail in the CES narrative. However, employers with effective programs that find and eliminate hazards and that provide appropriate employee education and involvement will be in compliance with the rule without further action being required.
15.02	**WC Rates determining coverage** Prioritization should be based on the highest frequency and severity rates. No business should be subject to regulation unless exceed established, reasonable threshold of combination of risk factors and lost time WMSD WC claims	The rule was developed to prevent WMSDs, not just respond after there has been an injury/illness. In addition, there are many disincentives for filing workers' compensation claims, as well as lack of knowledge about the right to file a claim. Also, some MSDs may be related to prior work or non-work-related activities or conditions. By focusing the rule on reducing WMSD hazards, the employer can prevent new disorders related to his/her workplace. If there are no hazards in the workplace, the employer does not have to "fix" any jobs for the purposes of this rule.
15.03	**The rule should require analysis/mitigation of work-related MSDs involving other risk factors** "The standard should include a brief provision requiring employers to analyze any task that results in a work-related musculoskeletal disorder and take corrective action. The proposed rule does not specify that an employer must mitigate physical risk factors if a work-related musculoskeletal disorder is diagnosed. Particularly, a work-related musculoskeletal disorder that is the result of an employee performing a task with a physical risk factor not classified as a hazard requiring corrective action."	As discussed in the CES narrative, L&I has determined that an injury-based approach is not necessary and has adopted the prevention-based approach in the rule. Requiring actions based on the existence of a WMSD would be inconsistent with that approach.
15.10	**Medical Management** "Medical Management. There are no provisions in the standard for guidance for health care providers in terms of the management of WMSDs, education about ergonomic risk factors, or the physical	L&I does not consider medical management to be a necessary characteristic of a risk-factor based (prevention-based) rule such as this one. Guidance to health care providers about medical management is appropriately the province of the industrial insurance system, not the occupational safety and health program.

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	requirements of "light work". Guidelines for health care providers' management and education need to be addressed in the rule.	
15.10	The rule does nothing for employees who have already been injured due to work-related musculoskeletal disorders	The rule focuses on prevention of injury, and in that sense will protect both healthy workers from injury and injured workers from further injury. Issues of disability prevention after an injury has occurred are addressed within the workers' compensation system, and issues regarding disability accommodation are addressed by state and federal laws on the subject.
15.15	**Injury-Based rule will not work** "A large portion of the agricultural workforce consists of seasonal labor. There is no accurate way to determine if an ergonomic injury occurs with the current employer, a previous employer, or a combination of both. Therefore, in many cases it is impossible to pinpoint what caused the injury and which employer is responsible."	The L&I rule addresses this problem by not holding particular employers accountable for specific injuries, but for the risks present in their worksites.
15.15	What accommodation in the standard is there for jobs which are not producing musculoskeletal disorders? Without an accommodation, employers will be spending considerable time and money implementing ergonomic fixes for jobs that are injury and illness free or no OSHA recordable cases.	This rule is a risk-factor based rule, rather than an 'injury based' one. Therefore, jobs that have not yet produced recorded musculoskeletal disorders are not automatically exempted from the rule. This approach is a preventive approach. In addition, it avoids the problems for transient employment that can be created by an injury-based approach.
15.15	"In other words, will the individual's propensity to injury, previous work experience, and outside activities be taken into consideration, or simply because an injury has occurred the company's efforts will be considered inadequate?" "We can spend our money, time and effort on this rule and still not see a statistical difference because of the cumulative nature and non-controllable aspects of our employees' home environment and personal health responsibilities."	The rule does not rely on injuries to determine whether a violation has occurred, so questions about the source of a particular injury are irrelevant. Controlling the risk factors identified in the rule will reduce, but not eliminate, WMSDs for the average employer (although individual employer experience may vary).
15.20	**Employers are not getting away with ignoring WMSD injuries. They are paying for these injuries in claims costs and lost productivity.** "Anyone not familiar with the process would think that business is currently getting away with murder by not addressing the ergonomics injuries reported by their employees. This is not the case. Every reported injury, and any lost time associated with the injury, affects the amount the company pays toward the disability fund. This goes beyond the cost to the company for the loss of the workers' lack of productivity."	The comment accurately reflects one of the costs of uncontrolled risk factors. Unfortunately, not all employers have been sufficiently motivated by the economic realities of the situation, and therefore costs – and harm to the workers themselves – have continued unnecessarily.
15.30	**Rule will result in more claims being filed, not less.** "I have been told by individuals associated with L&I, that almost every	An increase in the number of claims *filed* will not, in itself, have an effect on industrial insurance premiums. An increase in the number of industrial insurance

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	time a new program is instituted, instead of reducing claims, there is an initial spike in claims that EVENTUALLY tapers off to approximately the same rate as before the change. Our company enjoys and L&I experience rating of .852. This is substantially below the norm. If we receive a rise industrial injury claims, our experience rating will increase, as will our premiums." "This also seems to be another way to stimulate increased L&I claims. (I.E. lets educate them so they know what kinds of injuries to claim.)." "The mandated "General/Specific Performance" provision would likely increase the potential for some employees to file false WMSD reports of injuries caused by external factors unrelated to actual job functions." "There will be a spike of claims. Experience factors will rise as new claims due to the Standard are rates across previous employers, even though there were no signs or symptoms of an ergonomic injury while the claimant worked for the previous employer."	claims *allowed* would suggest that employees with valid claims have failed to file them in the past and may have done so as a result of greater awareness and understanding on their part. Since those employees would have been entitled to benefits in any case (whether they claimed them or not), the hypothetical spike described here does not represent an additional cost, but appropriate payment of existing obligations. Such an increase in claims would not, of course, equate to an increase in injuries.
15.40	**Work-relatedness for a workers' compensation claim** "Officials have said that the proposed rule focuses on prevention, rather than on injuries, and that having an injury will NOT be considered proof that the employer has failed to abide by the rule. If that's the case, will you affirmatively state, in writing, that injuries under this rule CANNOT be used to support a finding of work-relatedness for the purpose of a workers' comp claim?" "Clarify in writing that the mere existence of a "caution zone job" or "WMSD hazard" cannot be used to support a finding on a job-related injury for the purposes of a workers' compensation claim." "The fact of the matter is that I could claim a back injury while sitting at an L&I conference and make it stick as work related. The standard will simply make this kind of action easier." "It is more likely that the department and the medical profession will take for granted the existence of work-related injury if the employee is performing a "caution-zone" job because the department presumes that the job contains "physical hazards" that cause MSDs. For the same reason, employer efforts to return injured employees to work will also be	The rule does not address workers' compensation practices or change existing laws regarding claims allowance in any way. Obviously, an informed medical opinion regarding an employee's condition will consider the presence of risk factors such as those on which the rule is based. Therefore, the same evidence of the relationship between certain work activities and various medical conditions on that supports the adoption of the rule may also be relied upon in relation to a particular employee's claim. However, the department will not use the rule as a basis for the allowance or rejection of a claim.

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	hampered. It is unlikely that a physician will release an employee to return to work in a "caution-zone" job. The terminology is simply inflammatory and invites abuse by others. If these injuries, many of which may involve questionable work causation, are compensable at the levels required by WISHA, employees with more clearly work-related disabilities may soon demand higher compensation."	
15.40	"Appointment of Workers' Compensation "ergonomic" claims should include non-work factors that may have contributed to the injury." "Euphemistically speaking, the vast majority of the state's workers are out of shape. Because this proposed rule does not address nor take into account the affect of poor physical conditioning on WMSDs but only places the burden of proof onto the employer, this company does not feet it should be totally responsible for the medical costs of our employee's WMSDs injuries."	The rule does not affect responsibility for medical costs. In using workers' compensation data, L&I relied on the best available data. L&I recognizes that MSDs can also be caused or aggravated by non-work activities, and this rule in no way addresses those activities or makes employers responsible for doing so.
15.60	**Incentive programs to reduce claims** **"**This route ignores the success in the workers' compensation arena that has been achieved by offering incentives for employers to initiate similar activities to make work environments safer. In our state, the drug-free discount program is recently implemented. Retrospective Rating is another. Clearly both of these programs demonstrate that employers will voluntarily undertake programs if provided adequate incentive toward participation."	The industrial insurance program is experience rated, which has for years provided an incentive to reduce these claims. As noted in other comments and in the CES narrative's discussion of alternative approaches, the existing economic incentives have not provided sufficient motivation for all employers.
16	**Employer judgment, L&I requirements and employee input**	
16.01	**L&I should defer to the employer on corrective actions** [L&I should] "Not substitute its judgment for that of the employer unless the department can show, to a substantial certainty, that its proposed corrective action will result in a greater reduction of injuries if an employer makes a good faith effort to identify, prioritize and correct hazards." "An employer's ergonomics program is determined to be sufficient provided that the employer has made a reasonable attempt to identify ergonomic hazards and is making a reasonable attempt to correct them. L&I may not substitute its judgment for the employers unless the proposed corrective action is a proven effective solution that is technically feasible, based on scientific consensus, industry accepted, generally available, and economically reasonable."	The rule focuses on well-documented risk factors that represent hazardous exposures in conditions described by the rule. It defers to the employer in identifying and implementing appropriate actions to correct those hazards, as well as in determining appropriate methods to identify those hazards (if the employer is using the general performance approach). The comments seem to suggest that L&I should avoid requiring specific abatement measures that would eliminate the hazards in a particular way; the rule avoids exactly such a substitution of judgment.

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16.02	**Too Much Employee involvement** "The rule goes too far by giving too much power to the employee to select the measures to reduce hazard exposure. Employee input is very valuable but should not supplant an employer's judgment." "…increasing workers' ability and power to effect improvements in their working conditions will result in safer and healthier workplaces. The balance of power will shift and the latitude that employers' presently have to expose workers to hazards will be curtailed." "Restore employer flexibility so employees and employers can work together"	The employee involvement described by the rule does not give the employee the power to select measures to reduce exposure. It provides for appropriate involvement and participation, but it does not reduce the employer's authority – or responsibility. It is consistent with the employee involvement expectations already found in the safety committee/safety meeting requirements of WAC 296-24-045.
16.02	The proposed rule mandates employee participation as essential to a satisfactory ergonomics program. In particular, employers must "provide for and encourage employee participation in analyzing caution zone jobs and selecting measures to reduce WMSD hazards". This duty is likely to place employers, especially those whose employees are not represented by a union, at increased risk of violating the National Labor Relations Act in order to comply with a WISHA requirement. Many employers have found that committees consisting of rank and file employees, and members of management, having a broad charter to address a variety of workplace safety and health issues, have served their companies and workforces well. Yet, according to the National Labor Relations Board, these committees often constitute employer-dominated "labor organizations" in violation of the National Labor Relations Act.	The rule does not require employers to engage in activities in violation of the NLRA. Employers must design a process that complies with the NLRA, but it is not necessary to violate the NLRA to achieve employee involvement. WISHA standards already require a safety committee, and employers are able to comply with that requirement without running afoul of NLRA requirements.
16.02	There is no abatement measure requirement in the rule. When can an employer say "no" to an employee's request or suggestions?	This is a risk factor based rule. When the specific risk factors covered in the rule is controlled under the respective limits in accordance with the hierarchy of controls, the employer is in compliance.
16.03	**Simplifying the science increases the risk of being overly cautious and also underestimate risk. The employers and employees must have the ability to question any results using the specific performance approach and use more detailed, valid methods for assessment.**	The rule provides employers the choice of using more detailed, valid methods of assessment. The list of examples of such methods has been expanded in the final rule.
18	Implementation schedule	
18.01	**Timeframe for identifying and reducing hazards long enough, too long, or appropriate.** "This rule imposes an unrealistic timeframe for identifying and reducing hazards associated with musculoskeletal disorders – with no assurance that our efforts will be successful nor applicable to the department."	The department has concluded that the time frame in the final rule is appropriate. The first enforcement date (awareness education) has been delayed until July 1, 2002. The time frame is not unrealistic (but considerably longer than for typical rules), but it is appropriate to the situation. Many tools exist already, and the principles or hazard reduction can readily be adapted to new situations.

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	"Because our company is part of a targeted industry, total compliance for all of our members will have to be completed within four years of adoption of the proposed rule. In its supplement to the CR-102 submission of the proposed ergonomics rule, the department states that it recognized as far back as the 1980's its need to provide information and technical assistance to employers to help control work-related musculoskeletal disorder hazards. However, scientifically proven resources for reducing ergonomic hazards associated with musculoskeletal disorders for the sheet metal industry are still not available." "Employers have up to 6 years to comply and do not have to even begin efforts until 3 years after the final rule. This is too long. Various phases could be completed within one year (e.g., awareness education, and any "simple fixes" like changes in computer workstations could be completed within one year)." "We have far too many members that are already suffering from WMSDs or will begin to suffer during this phase-in period. We believe that the quantity of documented WMSDs provides ample reason for the Department of Labor and Industries to shorten the time periods" "The proposal provides an inordinately long time for employers to implement the requirements, especially for moderate size businesses where many of these injuries occur." "The initial implementation schedule, though feasible for many manufacturing type tasks, will be difficult to comply with for many construction, maintenance and agricultural tasks. These types of tasks are very dynamic in terms of location and the non-routine nature of their activities. … implementation schedule be extended to allow sufficient time to meet these challenges" "SEIU URGES WISHA TO INCLUDE HOSPITALS (Sic Code 806) IN THE FIRST ROUND OF THE IMPLEMENTATION SCHEDULE." "Some employers with very large workforces may not be able to complete the hazard analysis for each caution zone job within 24 months. Additional training will be required for those performing Hazard Analysis to familiarize them with available tools, the regulation and Appendix B. … ORC recommends that the compliance dates be extended by an	The department has also concluded that the selection of industries based on the prevention index (described in more detail in the CES narrative) remains the best approach to determining which industries should be affected first, whether public or private sector. Finally, L&I has concluded that a longer delay for small employers is appropriate in order to help mitigate any disproportionate economic impacts on small business that may exist.

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	additional 12 months for both the Hazard Analysis and the Hazard Reduction portions of the regulation." "We recommend that instead of the 12 industries with the highest risk of WMSD's be required to comply with the rule before other employers, the rule should include the top 20 industries with the highest risk. That would include the hospitals (SIC code 806) which pose a significant risk for registered nurses. … "these dates are simply too generous … we strongly urge you to tighten the timeline so that workers need not be exposed to WMSD hazards unnecessarily. We recommend that each phase of the compliance dates be moved up by 12 months." "Delaying implementation of the rule may prevent industries from implementing costly workplace changes that are later proven to be ineffective in reducing injuries." "The implementation time frame is not attainable without additional measures for construction. The rule requires workforce education at 15 months, task analysis at 24 months and reductions at 36 months after adoption. To educate everyone involved properly, the task analysis should be done first. Thus, Contractors have less than 15 months to perform their analysis and begin the education process." "Why is the implementation period for small companies longer than for large companies? If this rule is to be enacted, the implementation period should be the same for all companies because WMSDs are not more prevalent in the larger companies. The varying implementation period seems to indicate that the Department of Labor & Industries is not ready to administer this rule and will rely on the large companies to develop policies and procedures that can then be used by the smaller companies. The costs to develop this program should not be borne by the large companies." "we ask the Department to delay the proposed implementation period for city employers and related job classifications. We believe that an extension of two more years is more than reasonable to help cities deal with the complexities of the regulations, in a time when their staff and resources are dwindling due to the passage of I-695." "The rules should become effective immediately to help the workers now,	

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	not three to six years after the rule's adopted as proposed. How many more people do we need injured between now and then?"	
18.05	**The high-risk groups targeted under the implementation plan should be different.** "The "Initial Implementation Schedule" appears to be intentionally targeted at a narrow group of employers, many of which are among companies least able to comply with this proposal. Conspicuously absent from the first-year group are the following: a. Manufacturing industry b. Health care industry c. Public utilities, government and state agencies (Other than L&I)"	The implementation schedule is based on the injury rates for WMSDs and the overall injury numbers of WMSDs within the industries. It provides a sound and objective basis for decision making. In the final rule, the most recent data available has been used, which does include certain segments of health care.
18.10	**Seasonal Agriculture** "The phase in program as written appears to treat seasonal agricultural employers the same as large employers. The risk of repetitive motion injury in seasonal employment is lower than that of permanent employment."	The implementation plan has been modified to reflect annual "full-time equivalents" in order to better reflect employer size. However, it is an error to think that seasonal employment is inherently safer than permanent employment.
18.40	**Effective within 2 years or withdrawn** "To work, any rule must, a) yield effective results in 2 years or should sunset"	Given that the rule will not require any action by employers for 25 months (July 1, 2002) and will not be fully in effect until July 1, 2004, it is an unreasonable expectation that the rule will have demonstrated its effectiveness within two years.
19	Language and definitions need to be added/clarified	
19.01	DEFINITIONS NEEDED "Typical work" needs to be defined. "Reasonable determination" needs to be defined (05105). "Effective alternative means needs to be defined (05110). "General Performance Approach" needs to be defined (05130). "Specific Performance Approach" needs to be defined (05130). "effectiveness" needs to be defined (05140(3)). "safe harbor" need to be defined "Regular and foreseeable" needs to be defined.	In many cases, these terms either are defined or are clear in the context of their use. "Typical work" is defined in the context where it is used, which provides additional language not in the original proposal. "Reasonable determination" is used consistent with its common usage. "Effective alternative means" will be determined in relation to the identification and correction of risks and employee education and information. "General performance approach" is defined by the requirements found under it, as is "specific performance approach." "Effectiveness" has clear meaning – the rule does not provide specific, limited criteria in order to afford greater flexibility to employers. "Safe harbor" has clear meaning – the employer relying on such documents will not be in violation. "Regular and foreseeable" has been addressed with further clarification to the caution zone.
19.01	**The following terms need to be well defined:** "Intensive keying"	Several terms have been more clearly defined or the context in which they are used has been clarified in the final proposal.

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	"High" and ""moderate" vibration. "Total workshift duration" "Recovery cycles" "Few" "Light" task demand **"**SUFFICIENT LEVEL" "The phrase, "intensive keying," should be defined in the CZJ table, probably by adding the text from the definition in section 296-62-05150. Similarly, "high" and "moderate" vibration should be defined more explicitly in the table." "clarification of how to characterize the total workshift duration of a particular posture or motion, as stipulated in the CZJ table, when it occurs intermittently for short periods of time rather than more continuously" "This same section includes a definition for the phrase, "recovery cycles," but I did not find this phrase anywhere in the rule." "The definition of "intensive keying" is somewhat better, but what does WISHA mean by "few opportunities for temporary work pauses."" "This definition is unclear by the use of the term "few" seconds. If we assume a conservative perspective that "few" is three, then that translates to 20 motions per minute or 1,200 motions per hour. There is no scientific research literature that establishes that 1,200 motions per hour of the hand, wrist, elbows, shoulders or neck increases the risk for WMSDs. This threshold of repetition is unjustified and insupportable." **"The definition of recovery cycles is unclear. What is a "light" task demand? Is a light task one that is less than the threshold values defined in WAC 296-62-05130?** How often and how long must a rest break be to qualify as a rest break under this provision?" "Under the proposal, so long as the risk factors have a "sufficient level" to contribute to the type of MSD recorded and the employee's activity (or condition) in which the risk factor occurs, makes up "typical work" the requirements of the proposed rule are applicable. This approach compels employers to constantly monitor all jobs to determine if any work-related risk factors have risen to the level of "sufficient" and would, therefore, trigger coverage under the proposal."	"Sufficient level" is only an issue for employers who choose to rely on the general performance option. Coverage under the rule is triggered by the presence of a specific risk factor as described in the caution zone table and has nothing to do with an employer's independent assessment of whether the risk factor is "sufficient" to cause harm. Employers who wish specific guidance can rely on the specific criteria in Appendix B. Appendix B and the examples referenced in the text provide additional guidance that can help employers who choose the general performance option determine a similar level for comparison.
19.02	**Feasibility Determinations** "Our industry, compared to "fixed" industry or singular location firms, is incredibly dynamic and constantly changing. Workplace location can change daily and tasks hourly, or more often, depending on the need of the	The basis for the test of economic and technological feasibility (discussed in the CES narrative) is well-established in case law and has been applied in other areas of occupational safety and health enforcement in the past. However, the department agrees that the use of industry best practices to help define the limits of

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	project. What is feasible to one employer may not be to another, or may not be feasible from job site to job site. When "ergonomics" are added to the issue of feasibility, the problem only compounds. An action that is considered affordable to one employer may not be to another. A serious problem is now created, especially if they are direct competitors. The result may be that a competitive advantage is given to one employer or another in terms of direct costs today, never mind what the future holds in terms of lower workers compensation costs – they are irrelevant today. The playing field becomes less level than it already is – I do not believe that this is the intent of the department or the proposed rules." "There is an "economic feasibility" waiver included in this standard. It does not include the details needed to determine who is going to decide *what is economically feasible*. This waiver cannot be a SUBJECTIVE test administered, on the job sites, by an individual enforcement officer. The only way an ergonomic standard can be administered fairly is by developing an industry specific, OBJECTIVE standard over time, in cooperation with representatives of all the stakeholders of each industry."	feasibility is preferable to a case-by-case determination by the employer and, eventually, the department. The department will be using the implementation phase-in to work with a number of industry and labor groups (especially those in the highest hazard industries). The phase-in period should also help employers to deal with up-front costs. In addition, the net effect of the rule will be decreased costs to employers. Because some employers disregard the long-term benefits of ergonomics, the rule helps to eliminate the short-term disadvantage by requiring all employers to implement ergonomic solutions where hazards exist. Rather than creating a short-term disadvantage for employers who act responsibly, the rule helps to level the playing field by establishing an enforceable standard that can be applied to employers who refuse to act responsibly.
19.05	**Suggest restructuring definitions section of the rule, and other general usability/readability improvements.** "I recommend that the individual rows of the table in section 296-62-05130 be further distinguished from each other by including row headers, such as #1, "Hazard identification"; #2, "Hazard analysis"; #5, "Hazard reduction"; and #7, "Documentation". "In section 296-62-05150, the defined terms/phrases should be listed as one group, and should not be interspersed with the descriptions of information sources. The definitions are too easily passed by in the present format."	The department has considered a range of approaches and concluded that the table for presenting the two performance options is the best approach. The department has concluded that readers would be more likely to be confused by a separate definitions and references section, so we have left the definition of the resources in the definitions section.
19.11	**"Pinching" and "gripping" force/weight definitions.** "The pinching of an object weighing greater than 2 lbs. Results in a cautionary zone job. For this risk factor, pinch force is what is important not what the object weighs. What of tasks that include the clipping of parts to a rack with 4 ounce clips but require 12 or more pounds of force to use? The wording of the standard would exclude this operation as even a caution zone job. I recommend this requirement be corrected. … For the specific performance approach, gripping an object weighing more	The final rule includes the force of the grip and limits the use of weight to objects being supported by the grip.

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	than 6 lbs. Per hand for more than 4 hours a day is defined as a WMSD hazard. If my job was to push a grocery cart around filled with 30 lbs. Of groceries for 4 hours, the proposed rule would tell my employer to engineer a solution for me under this rule or limit me under this threshold. No other ergonomics analysis would find this a problem on it's own. I recommend this requirement also be corrected." "High hand force: The concept of specifying the weight of the object being pinched as a risk factor is confusing. The more typical definition of risk is the force of the pinch grip required to hold or manipulate the object."	
19.12	**"Best practices," "best management practices" needs to be better defined, and guidance provided.** "The standard states that we adopt best management practices. Best management practices have been proven to work in Europe, but they are not available to our industry within the United States."	The standard does not use "best management practices" or require "best practices" to be adopted. It references "best practices" as methods that can be identified and agreed upon by industry labor and management and by the department as representing appropriate ergonomics solutions within an industry or a portion of the industry.
19.16	**"Must" is too strong a word to use in the rule.** "On page 3 of "Supplement to CR-102 submission proposals" eight key elements, **"Must"** is an unsafe word. Item 2: "Employers must ensure employees working in or supervising these jobs receive Ergonomics awareness education". We are a seasonal business and have new employees daily. Item 3: "If jobs have WMSD hazard the employer must reduce exposure below hazardous levels or to the degree feasible." What is feasible and who has scientifically determined hazardous levels? Item 5: "Employers must provide for and encourage employees participation in activities required by the rule." Must is too strong a word. Our employees have a big say but we don't force them to participate."	"Must" denotes a requirement, for which an employer is ultimately liable to citation. It has the same meaning in statute or regulation as "shall." In the cited examples, "must" accurately reflects the department's meaning. The ergonomics awareness education requirement specifically addresses the timing of the education. Within that context, employers *must* ensure that employees have received it. Feasibility is discussed in the CES narrative. The rule specifies hazardous levels for employers who choose the specific performance option. Whether employers use the specific or general performance option, they *must* eliminate the hazards, if feasible. The rule does not say that employees must force employees to participate. It states that employers must provide for and encourage employee participation.
19.30	**"no-recordkeeping" is false and misleading.** "Finally, the department's estimates for basic awareness education, training, and managerial and administrative costs are deceptive, as the "no record-keeping" requirement in the proposed rule is false and misleading. To demonstrate that compliance activities were carried out, documentation will be essential. In fact, as an employer in a targeted industry, a sheet metal contractor may have to be prepared to produce documentation to demonstrate that activities undertaken to assure that the rule was not	Under the law, the department must document that a violation occurred before issuing a citation. While employers may choose to maintain additional documentation in the case of a dispute, the rule does not require any such records. Put simply, an employer who does not keep records of caution zone determinations, awareness education, or hazard analyses cannot be cited simply for failure to have such records. If employee interviews or direct observation suggest that one or more of these did not occur, the employer may wish to dispute that conclusion with records or other documentation. But they are not required.

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	applicable to its workforce."	
19.40	**Hierarchy of Controls** "Will the final rule require that PPE is only used after appropriate consideration of other more effective and less user-dependent control measures following the accepted hierarchy of controls? Failure of the PPE or its improper selection and use frequently can result in additional worker WMSD."	The final rule makes clear that PPE can only be used when more effective controls, such as engineering controls or administrative controls, are not feasible (or will not reduce the hazard sufficiently).
19.40	The Rule specifies that engineering controls should be firstly used to control or reduce WMSD hazards, then administrative and personal protective equipment. Why can't we use a simple method to reduce the hazard (such as providing a pair of knee pads) rather than expensive ones (e.g. changing the whole machine)? It may not be feasible to rotate employees on different jobs due to different pay scales and training requirements etc.	The rule is consistent with the well-established hierarchy of controls in occupational health and safety. Controls that rely almost entirely on employee training and behavior, such as lifting techniques or personal protective equipment, are less reliable and therefore engineering or administrative controls are preferred (where feasible).
19.50	**The definition of MSD is much too broad.** "We object to the data "50,000 accidents a year of this type" upon which this rule is based. This data is taken from claims, which include the work-relatedness opinion of doctors who have *not seen the workplace*, nor do they know the *work* of the claimant. The injuries or accidents are not differentiated by age of the employee. Employees who have repeat accidents of the same nature are counted as separate events. The definition of MSD is so broad as to be meaningless." "MSD injuries are very loosely defined and left to varying interpretations" "We suggest WAC 296-62-05150 be revised as follows: "Work-Related Musculoskeletal Disorders (WMSDs)" – ~~Occupational d~~ Disorders demonstrated to be caused or aggravated by work that involve soft tissues such as muscles, tendons, ligaments, joints, blood vessels and nerves. Examples include: Work-related ~~M~~ muscle strains and tears, ligament sprains, joint and tendon inflammation, pinched nerves, degeneration of spinal discs, carpal tunnel syndrome, tendinitis, and rotator cuff syndrome. For purpose of this rule, WMSDs do not include injuries from slips, trips, falls, motor vehicle accidents or being struck or caught in objects.""	The rationale for the rule is based on the best available data. Occupational disease claims are adjudicated based on a consistent set of criteria, and claims are only allowed and paid if the legal tests have been met. The department also has been provided with testimony suggesting that many employees do not report WMSDs when they occur. The definition of WMSD is part of the rule's purpose. It is not necessary that employers understand or agree to it in order for the rule to work. The rule does not rely on an injury trigger, but on the identification and reduction of a specific set of risk factors that have been shown to cause WMSDs.

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20.00	**Non-Economic Comments on Ergo survey 1**	
20.01	**Not big enough** Not big enough to identify problem areas by industry, etc.	We used the SHARP 1998 Employer Survey "Musculoskeletal Disorders, Risk Factors and Prevention Steps" to estimate the extent of employee exposure to risk factors by industry, as well as some of the general measures employers take among those taking prevention steps. This report is available from L&I upon request.
20.02	**Employers don't see a problem** Survey indicates majority of employers didn't consider WMSDs a problem and 2/3 reported not having any WMSDs in previous 3 years	Not all employers have workers with reported WMSDs in the workplace at any one time. This is particularly true of the smallest employers (1-10 employees) where the statistical likelihood is lower based solely on sample size. Among large employers (50+ employees) 67% reported upper extremity, 61% reported back and 48% reported lower extremity disorders, compared to 15%, 11% and 7% respectively for the smallest employers. Turnover and reporting bias are often issues in small workplaces. The extent to which this was true in this survey is not known. Awareness of WMSDs and their relationship to workplace hazards is often unknown to small employers and their workers. This is why ergonomic awareness education is so important.
20.03	**No clear evidence of risk factor pattern** Employer survey doesn't give clear evidence of risk factor pattern and finds that many such factors are not associated with MSD occurrence	The decision to keep the 1998 employer survey as simple as possible resulted in a high response rate of 75%. The goals of a survey are very different from an epidemiological study. It's purpose was to describe the extent of exposures. One of the limitations of the survey design was not being able to look at combined exposures, such as number of employees exposed to both high force and high repetition, or awkward postures and intensive keying. Additionally, we were not able to separate WMSDs by body region. Thus, for statistical modeling purposes, we could only look at all WMSDs and each risk factor. One would not expect to find a positive association between, for example, intensive keying and back or lower extremity WMSDs, and in fact these results point this out. Most of the exposure-response relationships were identified with manual handling, working with the hands above the shoulder, repetitive arm work, and use of vibrating tools.
21	**Worker responsibility**	
21.01	**Difficult to convince employees to take actions** **…having to supervise all of my employees individually…: posture, keyboard usage, mouse usage…**	This rule does not establish significant new obligations to supervise employees not already defined in the WISHAct. The rule requires employers to use control methods that do not rely on personal behavior before turning to those methods that do rely on such behavior. The hierarchy of controls reflected in the rule recognizes that solutions that do not rely on the individual employee for implementation are always superior to those that require extensive training and enforcement by the employer. This principle is built into many other WISHA rules.
21.01	I provided ergonomically correct tools, workstations, and equipment, but the workers will not use them or will not use them correctly. How could I	The rule prefers controls that do not rely on individual employee behavior for success. To the extent an employer must rely on such behavior, the employer has a

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	force them to be in compliance?	number of available mechanisms to encourage and, when necessary, to enforce safe work practices.
21.01	"Since these rules are to be in place to circumvent possible future injury it will be difficult to convince employees, who are human, that they may be risking future injury. Who ever listens to those warnings? Only the most astute people and they are not the ones in the general work force."	The rule confirms a hierarchy of controls that prefers controls that do not rely on the behavior of individual employees. In any event, employers have the capacity to enforce workplace rules and must do so in relation to other safety and health requirements, virtually all of which focus on the prevention of "future injury."
21.01	**L&I can't expect employers to be responsible for employees** "If we have to invest many thousands of dollars to modify our work place, it would be very upsetting to have spent the money and not have a method of ensuring that the employee will have to comply with the correct utilization of those changes."	Employer responsibility for workplace safety and health is well-established and is the basis for the Washington Industrial Safety and Health Act. While employers are not required to monitor employees continuously, they *are* responsible for enforcing employee compliance with workplace safety and health rules (and for identifying and implementing available controls that do not rely upon individual employee behavior for their success when feasible). Employers have a wide range of available methods to enforce employee compliance with employer expectations.
21.02	**Worker training and conditioning should be primary** "It is my firm belief that stress should be placed on training of proper lifting, body fitness, and warm up, exercises before work, rather than limiting a workers activities. Not all the limits in the world will replace education and awareness."	As noted elsewhere, education and awareness do not provide the best solutions to systemic or engineering problems that are outside the employee's immediate control. Training is only part of the solution, and it rarely provides the best way to address an occupational hazard.
21.05	**Workers should be free to chose high risk trades, with no ergonomics rule to restrict their activities.** "My job has caution zone written all over it. … unfortunately there is no light duty here. No one forced us into this trade, it's what we do." "Thankfully we're not indentured servants, we work here "at will" and can leave anytime .. which may be necessary due to the likely migration of manufacturing investment from our state."	The WISHAct does not allow L&I to accept the argument that a risk to employees of injury or illness is acceptable provided the employee has freely chosen the activity. In fact, since wages create an implicit "economic control' over an employee's freedom, it is difficult to describe a choice to do a job that is not safe as a truly "free" choice when other employment options may not be available. As a matter of legislative policy, job safety and health has not been left to the "free market."
23	Criticism of the rule as not protective enough	
23.01	**Combination of Risk Factors Increases Risks** …there are many jobs that have exposures to several of the risks but do not exceed the exposure limit of any single risk alone. With a combination of all the exposures together, the risk of developing a musculoskeletal disorder may be as great or even greater. This could be a loophole for employers….	It is true that not all risks will be addressed by the rule, nor will all WMSDs be prevented by employer compliance with the rule. The rule focuses on specific, readily identifiable risk factors for which there is compelling evidence. The hazard levels discussed in Appendix B do take into account the inter-relationship of risk factors when caution zone jobs are being assessed under that option, as do most widely accepted approaches of the type recognized under the general performance option.
23.02	**Risk factors won't be addressed because of short duration** Most tasks in nursing not performed two hours per day, so risk factors associated will not be covered by the rule.	The duration for the risk factor is not based on duration of time exposed to the risk doing individual tasks but of the time exposed doing all tasks together involving the risk factor. If the total time exposed still does not exceed the levels in the rule when taken together, then the risk is not addressed by the rule.

Issue number	Typical Comment(s) or Typical Point(s)	Response
23.03	**The proposed rules need to include detailed record-keeping requirements.** "There should be stringent record-keeping requirements on the job analyses, worker involvement, training (extent of training and who was trained as well as who did the training, etc.) Abatement methods and evaluation methods."	The department has determined that detailed recordkeeping requirements are not necessary since the rule identifies the risks that must be addressed and existing enforcement techniques (direct observation, interviews, etc.) can be used to determine the extent of any violations. While it is likely many employers will choose to keep records of various sorts, L&I decided that requiring such records would be unnecessarily burdensome.